

Influence of Digitization Strategy on Record Storage Practices in Nairobi City County's Urban Planning Department, Kenya

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Abstract

This study examined how digitization strategy influences record storage practices in Nairobi City County's Urban Planning Department, Kenya. It sought to establish how digitization contributes to record preservation, accuracy, security, accessibility and retrieval, while identifying institutional challenges that may limit its effectiveness in supporting efficient records management and evidence-based urban planning decisions. The study adopted a descriptive cross-sectional survey design and a census approach targeting 75 departmental personnel. The study collected primary data through structured questionnaires and semi-structured interviews. The study received 66 completed questionnaires, yielding a 93% response rate. Data were analyzed using descriptive statistics, Spearman correlation and binary logistic regression in SPSS Version 31. The findings showed that digitization strategy had a positive and statistically significant relationship with record storage practices ($r = .354$, $p = .004$). Logistic regression further showed a significant positive effect, with digitization strategy associated with approximately six times greater odds of effective record storage practices ($\text{Exp}(B) = 6.312$, $p = .003$). Record preservation received the highest mean score ($M = 3.92$), while retrieval speed recorded the lowest ($M = 3.53$). Major challenges included inadequate scanning equipment, weak supporting infrastructure, unclear digitization guidelines, limited staff training and inconsistent implementation across departmental units. The findings indicate that digitization improves record storage, although its influence remains constrained by institutional capacity and resources. The study concludes that a digitization strategy is necessary but insufficient for optimal record storage practices. The department should strengthen digitization infrastructure, formalize guidelines, provide continuous staff training, and improve the indexing of older physical records. These measures will improve record accessibility, preservation, and retrieval, supporting accountable, evidence-based urban planning decisions.

Keywords: *Digitization strategy; Record storage practices; Urban planning department; Diffusion of Innovations Theory*

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1. Introduction

Public sector institutions worldwide increasingly rely on digitization strategy to transform how records are created, stored, retrieved and preserved. Digitization strategy refers to the deliberate and systematic conversion of physical records into electronic formats, supported by appropriate infrastructure, skilled personnel, clear guidelines and consistent institutional practice, with the goal of improving accessibility, accountability and long-term preservation of records (Saffady, 2021). Effective record storage practices, in turn, encompass the systematic methods and policies employed to organize, protect and maintain records throughout their lifecycle, ensuring their integrity, accessibility and compliance with legal and organizational requirements (Saffady, 2021; International Organization for Standardization [ISO], 2016). Urban planning departments in county governments are particularly reliant on well-organized record storage because they generate large volumes of technical, legal and spatial records, including development approvals, land-use plans and building permits, that must remain retrievable and trustworthy over long periods. Understanding how digitization strategy shapes record storage practices is therefore central to improving transparency and service delivery in devolved government institutions such as Nairobi City County's Urban Planning Department.

Globally, developed nations have demonstrated that a well-structured digitization strategy can substantially transform public record storage and retrieval systems. In Estonia, the government adopted the X-Road data exchange platform and centrally coordinated information-security standards to digitize and interconnect public records across ministries, enabling secure, largely paperless administration of taxation, education and justice records (Espinosa & Pino, 2025). This centrally coordinated digitization strategy has allowed Estonian public institutions to reduce bureaucratic delay, minimize duplication of records, and strengthen public trust in the integrity of digitally stored information (Espinosa & Pino, 2025). In Asia, South Korea has similarly institutionalized digitization as a pillar of public administration reform. The Organization for Economic Co-operation and Development (OECD, 2025) reports that Korea ranked first among member states in the 2023 Digital Government Index, attributing this position to sustained investment in national data infrastructure, interoperable base registries, and structured data-sharing frameworks that support systematic digital record storage across government agencies. Korea's Digital Platform Government initiative further integrates thousands of public services into a single digitally stored records ecosystem, reducing the need for citizens to resubmit paper documents already held by other agencies (OECD, 2025). These global cases demonstrate that the success of digitization strategy depends not merely on acquiring digital tools, but on embedding them within coherent governance, infrastructure and policy frameworks that support reliable record storage.

Within Africa, the experience of digitization strategy in public records management remains considerably more uneven than in the global cases described above. In West Africa, Nigeria has taken notable regulatory steps to guide digital record management, including the enactment of the Nigeria Data Protection Act of 2023 and the establishment of the Nigeria Data Protection Commission, which together provide a legal framework for the secure creation, storage and protection of digital records within government agencies (Ogundipe, 2024). However, Ogundipe (2024) observes that digital record management in Nigerian public institutions began only in the 1990s and has largely proceeded through fragmented, agency-specific digitization efforts rather than a harmonized national strategy, resulting in inconsistent storage standards across ministries, departments and agencies. In Southern Africa, Botswana presents a comparable picture of gradual but constrained progress. Mosweu (2023) found that, although

the Botswana government has implemented enterprise-wide electronic records systems across several ministries as part of its e- government agenda, digital records preservation remains hindered by weak cloud infrastructure, inadequate archival policy frameworks and limited technical capacity among records personnel. These regional experiences suggest that, while African governments increasingly recognize digitization as central to modern public administration, weak institutional frameworks and infrastructural gaps continue to constrain the translation of digitization strategy into reliable, standardized record storage practices.

In Kenya, digitization has become an increasingly prominent feature of the national digital ecosystem, driven by government initiatives such as the e-Citizen platform, the National Land Information Management System and the digitization programme of the Kenya National Archives and Documentation Service (KNADS). Musembe (2025) notes that despite this national digital agenda, institutions such as KNADS still hold most of their collections in physical format and lack a comprehensive digital transformation strategy that guarantees continuous access to records. At the county level, the digitization of land and planning records in Nairobi has similarly proved uneven. Datta and Muthama (2024) examined the digitization of land administration records in Nairobi and its peripheral counties and found that, although the National Land Information Management System was intended to create a seamless digital platform, the actual process of digitization involved extensive, labour-intensive sorting of paper records by state officials who had little influence over the design of the digital systems they were expected to use. This finding shows that Kenya's digital ecosystem, while expanding rapidly at the policy level, still relies heavily on manual, resource-constrained processes at the implementation level, particularly in county government departments responsible for land and urban planning records, such as Nairobi City County's Urban Planning Department.

1.1 Problem Statement

Urban planning departments in Kenyan county governments generate and rely upon large volumes of records, including development approval files, land-use plans, building permits and zoning documents, which must remain accurate, secure and readily retrievable to support timely and evidence-based decision-making. Digitization strategy is widely promoted as a solution that can improve the accessibility, reliability, and long-term preservation of such records (Saffady, 2021). However, evidence from Kenya's devolved government institutions suggests that digitization efforts have not consistently translated into improved record storage practices. Datta and Muthama (2024) found that the digitization of land-related records in Nairobi County has been characterized by extensive manual sorting, inconsistent indexing and limited integration between digital platforms and existing storage systems, despite the National Land Information Management System having been in place for several years. Similarly, Musembe (2025) found that Kenya's national archival institution still relies heavily on physical records and lacks a comprehensive digital transformation strategy, raising questions about how much digitization strategy shapes storage outcomes in practice.

Within Nairobi City County's Urban Planning Department specifically, preliminary institutional reports point to persistent challenges, including inadequate scanning equipment, limited staff training on digital systems, absence of clear digitization guidelines and inconsistent application of digitization processes across units, all of which may undermine the department's ability to preserve, protect and retrieve records efficiently. What is happening, therefore, is a widening gap between the policy expectation that digitization strategy will automatically improve record storage practices and the operational reality of fragmented, under-resourced digitization efforts. What should be happening, according to established records management

principles, is a systematic digitization process, embedded in adequate infrastructure, trained personnel, and clear institutional guidelines, that measurably strengthens the preservation, accuracy, security, accessibility, and retrievability of records (ISO, 2016).

Existing studies have examined digitization mainly at the national or land-registry level, leaving a contextual gap regarding how digitization strategy specifically influences record storage practices within a single urban planning department, where records are technically complex and spatially referenced. Without department-specific empirical evidence, decision-makers in Nairobi City County lack a sound basis for prioritizing investment in digitization infrastructure, training and guidelines. This study therefore examined the influence of digitization strategy on record storage practices in Nairobi City County's Urban Planning Department, Kenya, to address this empirical and contextual gap.

1.2 Research objective

To determine how digitization strategy improves record storage practices in Nairobi County's Urban Planning Department.

1.3 Research Hypothesis

H₀: Digitization strategy does not significantly influence record storage practices in Nairobi City County's Urban Planning Department, Kenya.

2. Literature Review

2.1 Theoretical Review

This study is anchored on the Diffusion of Innovations (DOI) Theory, developed by Rogers (2003), which explains how new ideas, practices and technologies are introduced, adopted and spread within a social system. The theory posits that the adoption of an innovation is shaped not only by its technical qualities but also by how it is perceived, communicated and supported within an organization. In public sector contexts, DOI offers a useful lens for understanding why some digitization initiatives are readily embraced while others encounter resistance, delay or partial implementation.

According to Rogers (2003), the adoption of an innovation is influenced by five key attributes: relative advantage, compatibility, complexity, trialability and observability. Applied to digitization strategy, relative advantage is reflected in the extent to which digitization is perceived as superior to manual record-keeping in terms of faster retrieval, reduced loss of files, improved accountability and enhanced service delivery. Compatibility is important because digitization strategies are more likely to succeed when they align with existing organizational routines, legal requirements and professional records management practice (Saffady, 2021). Where digital systems are perceived as difficult to use or disruptive to established work processes, adoption may be slowed by staff resistance, as illustrated by Datta and Muthama's (2024) finding that the digitization of Nairobi's land records depended heavily on the invisible, labour-intensive work of officials who had little influence over how digitization systems were designed. Trialability and observability also matter, since pilot digitization projects and visible efficiency gains can encourage wider acceptance across departments, as in Mosweu's (2023) study of enterprise-wide digital records systems in Botswana's public sector.

Rogers (2003) further classifies adopters into innovators, early adopters, early majority, late majority and laggards, a classification particularly relevant to public institutions where digitization adoption is often uneven. Some officers or units may quickly embrace digitization, while others delay adoption because of limited technical skills, fear of change or uncertainty

regarding sustainability, a pattern documented by Musembe (2025) in Kenya's national archival institution, where digital transformation remained fragmented in the absence of a comprehensive strategy and sustained leadership commitment. DOI is therefore appropriate for this study because it explains how digitization strategy is introduced, perceived and institutionalized within Nairobi County's Urban Planning Department, showing that successful implementation depends on staff attitudes, institutional readiness and visible benefits, and not on technological infrastructure alone.

2.2 Empirical Review

Digitization is globally acknowledged as a core pillar of digital transformation in records and information management. At its core, digitization entails the systematic conversion of physical records into digital formats to enhance accessibility, efficiency, reliability, and long-term preservation (Saffady, 2021). Beyond the technical act of scanning documents, digitization represents a strategic shift in how organizations create, manage, retrieve and use records to support governance, accountability and evidence-based decision-making.

Globally, Estonia's experience illustrates how a centrally coordinated digitization strategy, anchored in secure data-exchange infrastructure, can transform record storage across an entire public administration, reducing bureaucratic delay and improving the reliability of digitally stored information (Espinosa & Pino, 2025). Similarly, the OECD (2025) documents that South Korea's sustained investment in national data infrastructure and interoperable digital registries has enabled systematic digitization of records across government agencies, positioning digitization strategy as a foundation for broader public-sector data governance rather than a standalone technical exercise. These global cases demonstrate that digitization strategy achieves its intended outcomes only when supported by coherent policy direction, adequate infrastructure and sustained institutional commitment.

At the regional level, evidence from Africa presents a more constrained picture. In Nigeria, Ogundipe (2024) found that digital record management has evolved through fragmented, agency-specific digitization efforts rather than a harmonized national strategy, with early digitization initiatives in the 1990s often limited to converting paper records into digital formats without corresponding improvements in classification or retrieval systems, although recent data protection legislation has begun to provide a firmer regulatory basis. In Southern Africa, Mosweu (2023) examined the digitization and cloud-based preservation of records in Botswana's public sector and found that, although several government ministries had adopted enterprise-wide electronic records systems, digitization outcomes remained constrained by weak ICT infrastructure, limited technical expertise among records personnel and the absence of comprehensive digitization policy frameworks. These regional findings suggest that digitization strategies in African public institutions often lack the institutional alignment necessary to translate technology acquisition into reliable, standardized record storage outcomes.

Locally, several sector-specific studies have examined digitization of public records in Kenya. Musembe (2025) investigated the digital transformation readiness of the Kenya National Archives and Documentation Service and found that, despite growing national interest in digital access to archival materials, the institution's collections remained predominantly physical, with no comprehensive digital transformation strategy in place. At the county level, Datta and Muthama (2024) found that digitization of Nairobi's land administration records, though intended to create a seamless platform through the National Land Information Management System, was in practice characterized by extensive manual sorting, cleansing and

reorganization of paper records by state officials, a process the authors describe as significant but largely invisible archival labour. This evidence highlights a need for a department-specific assessment of digitization levels within Nairobi County's Urban Planning Department, the focus of the present study.

2.3 Record Storage Practices

County urban planning departments generate large volumes of records essential for planning, decision-making, and legal compliance. When these records are poorly stored, they are at risk of misplacement, physical damage and delayed retrieval, undermining institutional memory, administrative efficiency and timely service delivery. Record storage practices encompass the systematic methods and policies used to organize, protect, and maintain records throughout their lifecycle, ensuring accessibility, integrity, and compliance with legal and organizational requirements (Saffady, 2021).

Record storage practices are integral to effective records management, which the International Organization for Standardization defines as the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use, and disposition of records (ISO, 2016). According to ISO 15489-1:2016, effective records management requires that records remain authentic, reliable, usable and possess integrity throughout their lifecycle, which depends on proper classification and indexing of records, use of appropriate storage media, controlled access mechanisms and measures that protect records from physical damage, loss or unauthorized alteration.

Contemporary research on public sector record storage highlights both the opportunities and persistent challenges of transitioning from paper-based to digital storage environments. Mosweu (2023) found that although enterprise digital records systems can improve storage organization and retrieval in government settings, their long-term reliability depends on adequate cloud and network infrastructure; without it, digitized records remain vulnerable to loss and inconsistent preservation. In the Kenyan context, Datta and Muthama (2024) demonstrate that improving record storage outcomes requires not only digitizing paper documents but also investing in the classification, cleansing and reorganization of records, since digitization without such complementary processes can simply transfer existing storage inefficiencies from paper to digital environments. These findings suggest that strengthening record storage practices in county government departments requires a combination of digitization, appropriate infrastructure and sustained institutional support, forming the basis for the present study.

3. Materials and Methods

The study employed a descriptive cross-sectional survey design to examine the influence of digitization strategy on record storage practices in Nairobi City County's Urban Planning Department, Kenya. This design was considered appropriate because it enabled the collection of quantitative and qualitative data from the target population at a single point in time, allowing the researcher to describe existing digitization and record storage conditions while testing the statistical relationship between the two variables.

The target population comprised 75 personnel, including architects, urban planners, records management officers, ICT officers, directors and senior administrators within the department. Because the population was relatively small and manageable, the study adopted a census approach, including all 75 personnel rather than drawing a sample.

Primary data were collected using structured questionnaires administered to architects, planners, records management officers and ICT officers. The questionnaire contained closed-ended items measured on a five-point Likert scale, ranging from Strongly Disagree to Strongly Agree. Semi-structured interviews were conducted with directors and senior administrators to obtain additional institutional perspectives on digitization strategy and record storage practices. A pilot study was conducted in a comparable urban planning department in Kiambu County, using ten percent of the target population, to assess the clarity and reliability of the research instruments. Content validity was established through supervisor review, while internal consistency reliability was assessed using Cronbach's Alpha.

Quantitative data were analyzed using IBM SPSS Statistics Version 31 through frequencies, percentages, means, and standard deviations for descriptive analysis, while Spearman's rank correlation and binary logistic regression were used to examine the relationship and predictive influence of digitization strategy on record storage practices. The study analyzed qualitative data from key informant interviews thematically and used them to explain and contextualize the quantitative findings. Findings are presented using tables accompanied by explanatory narratives. Throughout the study, the researchers strictly observed ethical principles, including informed consent, confidentiality, voluntary participation, and institutional authorization.

4. Results and Discussion

4.1 Response Rate

The study targeted 75 personnel drawn from architects, urban planners, records management officers, ICT officers, directors and senior administrators within Nairobi City County's Urban Planning Department. Structured questionnaires were administered to 71 respondents comprising architects, planners, records management officers and ICT officers, while the remaining 4 members of the target population, being directors and senior administrators, were engaged through key informant interviews. Table 4.1 presents the response rate achieved for the questionnaire survey. Of the 71 questionnaires administered, 66 were completed and returned, representing a response rate of 93%, while 3 purposively selected key informants participated fully in the interviews. This response rate was considered adequate for data analysis and interpretation, as it exceeded the minimum threshold generally recommended for survey research, thereby enhancing the reliability and generalizability of the study findings (Babbie, 2021).

4.2 Digitization Strategy

The digitization strategy adopted by Nairobi City County's Urban Planning Department was measured using six indicators, rated on a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Table 1 presents the results.

Table 1: Digitization Strategy

Indicator	SD	D	N	A	SA	Mean	SD.
Staff have adequate skills to carry out digitization tasks.	6(9.1)	13(19.7)	17(25.8)	20(30.3)	10(15.2)	3.23	1.20
The department has scanning equipment and digitization tools.	13(19.7)	17(25.8)	11(16.7)	19(28.8)	6(9.1)	2.82	1.30
The existing infrastructure adequately supports digitization activities.	12(18.2)	21(31.8)	15(22.7)	11(16.7)	7(10.6)	2.70	1.25
This department has clear guidelines for digitizing records.	12(18.2)	19(28.8)	17(25.8)	13(19.7)	5(7.6)	2.70	1.20
The department provides training on digitization of records.	20(30.3)	14(21.2)	19(28.8)	7(10.6)	6 (9.1)	2.47	1.28
Digitization processes are consistently followed across units.	15(22.7)	25(37.9)	12(18.2)	11(16.7)	3 (4.5)	2.42	1.15

The finding that staff have adequate skills to carry out digitization tasks received the highest mean score ($M = 3.23$, $SD = 1.20$), showing a somewhat positive indication of staff capacity. Nearly half of the respondents (45.5%) agreed or strongly agreed, compared with 28.8% who disagreed or strongly disagreed. This suggests that a reasonable proportion of employees possess the basic skills required for digitization, although the relatively high standard deviation indicates considerable variation in perceptions among respondents. This finding partly corroborates Tsvuura (2022), who examined the knowledge and skills required to manage digital records and emphasized the importance of appropriate professional competencies in digital records environments.

However, this finding should not be interpreted as evidence of sufficient organizational capacity. The fact that more than one-quarter of respondents disagreed that staff possessed adequate skills indicates that competency is not uniformly distributed. Moreover, one of the key informants stated that *“some planners and architects may resist using digitized records due to limited digital skills, a preference for paper-based files, or unfamiliarity with electronic records management systems.”* This aligns with the broader African experience reported by Sibanda and Schellnack-Kelly (2025), who identified inadequate records management and ICT skills among records professionals as factors undermining the trustworthiness of digital records. Thus, while the current study indicates a relatively stronger perception of staff skills than of other digitization resources, the findings suggest that skills development remains an area requiring continued attention.

The finding on the availability of scanning equipment and digitization tools ($M = 2.82$, $SD = 1.30$) is less encouraging. More respondents disagreed or strongly disagreed (45.5%) than agreed or strongly agreed (37.9%) that adequate equipment was available. This suggests that the department has some digitization equipment, but its availability and adequacy are insufficient to support digitization at the required scale. One key informant stated that *“the department has adopted Mfiles document management software which scans and organizes records using metadata rather than folders, making information easier to find from the system.”* This finding corroborates Datta and Muthama (2024), who found that converting paper-based

land records into digital form involves substantial archival and organizational labor. Similarly, Maina et al. (2025) argued that technological resources are fundamental to effective electronic records management.

The respondents' assessment of whether existing infrastructure adequately supports digitization activities was also low ($M = 2.70$, $SD = 1.25$). Half of the respondents (50.0%) disagreed or strongly disagreed, while only 27.3% agreed or strongly agreed. This finding provides stronger evidence that the challenge extends beyond individual equipment to the broader technological environment within which digitization is expected to occur. In other words, acquiring scanners alone would not necessarily resolve the problem if the department lacks adequate storage, networks, systems, and related infrastructure. This result corroborates Gichuki and Rotich (2019) and Maina et al. (2025), who found that infrastructure remains a persistent constraint in Kenya's transition from paper-based to electronic records management.

The finding concerning the availability of clear guidelines for digitizing records ($M = 2.70$, $SD = 1.20$) is equally significant. Almost half of the respondents (47.0%) disagreed or strongly disagreed that clear digitization guidelines were available, compared with only 27.3% who agreed or strongly agreed. This suggests digitization may be taking place without clear, consistently understood procedures. This is consistent with Kithinji (2015) who found that although a general policy existed on digitization at the Kenya National Archives and Documentation Services, there was no specific policy for the digitization process and only general guidelines were available. Similarly, Erima and Maseh (2025) emphasize the importance of effective legislative and regulatory implementation in achieving compliant digital archiving.

The finding that training on digitization of records received a low mean score ($M = 2.47$, $SD = 1.28$) is one of the clearest indications of a capacity-development gap. More than half of the respondents (51.5%) disagreed or strongly disagreed that training was provided, whereas only 19.7% agreed or strongly agreed. This suggests that even when employees have some existing digitization skills, institutions may not support these competencies through regular training. This strongly corroborates with Kithinji (2015) that all staff should receive training in records digitization, and institutions should recruit ICT and records management professionals with specialized skills. Similarly, Sibanda and Schellnack-Kelly (2025) identified inadequate ICT and records management skills as a significant gap in digital records management and recommended appropriate training and resources. Likewise, Tsvuura (2022) demonstrates the importance of knowledge and skills in managing digital records.

The lowest-rated indicator was the consistent application of digitization processes across departmental units ($M = 2.42$, $SD = 1.15$). A substantial majority of respondents (60.6%) disagreed or strongly disagreed that digitization processes were consistently followed, compared with only 21.2% who agreed or strongly agreed. This suggests the problem extends beyond technology availability or staff skills to the institutionalization and standardization of digitization practices. This finding corroborates Matlala et al. (2022) and Sigauke (2023) that even where frameworks and policies have been developed, implementation can remain incomplete.

The respondents were further asked to state the main challenges affecting the digitization of records within their department. A dominant theme was inadequate digitization infrastructure, particularly the shortage of scanning equipment and supporting ICT infrastructure. Respondent 9 stated, *"We do not have enough scanning equipment to digitize all the records. Sometimes staff have to share one scanner, which makes the process very slow."* This finding suggests that

appropriate technological infrastructure is a key prerequisite for effective records digitization. This finding corroborates with Maina et al. (2025), who highlighted the importance of appropriate technological facilities in supporting effective electronic records management. Similarly, Bassiouny (2020) argued that where scanning equipment is insufficient, the conversion of large volumes of paper records is likely to become slow and labour-intensive.

Another important theme was inadequate staff capacity and training. Respondent 6 explained, *“Some staff still lack the skills required to handle electronic records, and there has not been enough training on how to use the digitization systems.”* This indicates that investment in digitization should extend beyond hardware and software to include continuous staff training and capacity development. This finding corroborates Gichuki and Rotich (2019) and Ongwenyi et al. (2018), who suggest that technological transformation must be accompanied by the development of appropriate staff competencies.

4.3 Record Storage Practices

Respondents assessed the extent to which various indicators reflected record storage practices within Nairobi City County's Urban Planning Department, using the same five-point Likert scale. Table 2 presents the findings.

Table 2: Record Storage Practices

Indicator	SD	D	N	A	SA	Mean	SD.
Records are preserved for long-term use.	6(9.1)	0(0.0)	9(13.6)	29(43.9)	22(33.3)	3.92	1.14
Records are accurate and can be trusted.	3(4.5)	3(4.5)	9(13.6)	35(53.0)	16(24.2)	3.88	0.99
Records are protected from unauthorized alteration.	4(6.1)	5(7.6)	9(13.6)	28(42.4)	20(30.3)	3.83	1.13
Records remain accessible over time without loss of quality.	3(4.5)	11(16.7)	9(13.6)	26(39.4)	17(25.8)	3.65	1.17
The system reduces time spent searching for records.	4(6.1)	11(16.7)	11(16.7)	22(33.3)	18(27.3)	3.59	1.23
Records can be retrieved quickly when needed.	4(6.1)	11(16.7)	13(19.7)	22(33.3)	16(24.2)	3.53	1.21

The highest mean score was recorded for the statement that records are preserved for long-term use ($M = 3.92$, $SD = 1.14$), with 51 respondents (77.2%) agreeing or strongly agreeing. This finding suggests a strong perception that the department has mechanisms for maintaining records beyond immediate operational use. This finding aligns with Matlala et al. (2022), who identified preservation as an ongoing requirement for public-sector records, particularly as organizations increasingly transition from paper-based to digital environments.

The finding that records are accurate and trustworthy also received a relatively high rating ($M = 3.88$, $SD = 0.99$), with 77.2% of respondents agreeing or strongly agreeing. One key informant also stated that, *“We do have a register for the planning records, but it is not always completely up to date. New files are created and some are moved or digitized, and sometimes these changes are not immediately reflected in the register.”* This suggests that respondents generally considered the department’s records reliable for operations and decision-making. The

finding is consistent with Kipkurui and Maina (2025) that reliable records are particularly important in government settings because inaccurate or incomplete information can compromise administrative decisions, accountability and the continuity of public services.

The finding that records are protected from unauthorized alteration had a mean of 3.83 (SD = 1.13), with 72.7% of respondents agreeing or strongly agreeing. One key informant stated that, *"The electronic records are safer because not everyone can access them, but security attacks cannot be completely ruled out."* This finding indicates that respondents generally perceived the department's record storage arrangements as providing reasonable protection for record integrity. It is consistent with the broader records-management requirement that records should be protected against unauthorized modification and loss. Sargunavathi et al. (2024) also identified cybersecurity as an important concern in the digital environment, while the European Union Agency for Cybersecurity (2022) emphasizes the ongoing threats facing digital information systems.

The finding on the continued accessibility of records over time produced a mean of 3.65 (SD = 1.17), with 65.2% of respondents agreeing or strongly agreeing that records remain accessible without loss of quality. One key informant stated that, *"We have designated rooms for keeping the records and we try to keep them clean and free from agents of deterioration."* This result is consistent with Saffady's (2021) argument that effective records and information management should support the availability and usability of records when required. Similarly, Julaihi et al. (2024), demonstrated electronic records and cloud environments as approaches that can facilitate digital record keeping.

The finding that the record storage system reduces the time spent searching for records recorded a mean of 3.59 (SD = 1.23), with 60.6% of respondents agreeing or strongly agreeing. This suggests that the storage arrangements have contributed to operational efficiency by making records easier to locate. One key informant, however, provided a more cautious assessment: *"The situation is better, but we still have a lot of old physical files occupying space. Some records are not yet properly organized, and the electronic system has not completely replaced the manual files."* Another key informant stated that, *"If records are scanned and properly indexed, retrieval can take a few minutes. The problem is that not all the older planning records have been digitized, so we still depend heavily on the physical files."* The result corroborates Gichuki and Rotich (2019), who associated electronic records management practices with improved service delivery in Nairobi County. It is also consistent with Kurniadi et al. (2025), whose evaluation of electronic filing systems in government institutions considered the efficiency of electronic systems in handling records. This implies that well-organized storage systems can reduce the administrative burden of locating information and allow staff to devote more time to their core responsibilities.

Finally, records can be retrieved quickly when needed recorded the lowest mean score among the assessed indicators (M = 3.53, SD = 1.21). Although 57.5% of respondents agreed or strongly agreed, 22.8% disagreed or strongly disagreed and 19.7% remained neutral. One key informant also observed that, *"More records are now being scanned and stored electronically, and it is easier to locate some of the records than it was before."* The finding therefore suggests that retrieval is generally satisfactory but represents the area in which the department has the greatest opportunity for improvement. This result partly corroborates Gichuki and Rotich (2019) and Kurniadi et al. (2025) on the potential of electronic records systems to improve efficiency, but it also adds an important qualification: the mere presence of electronic or organized storage systems does not automatically lead to rapid retrieval.

Respondents were also asked to recommend improvements to enhance record storage practices and the accessibility of records within the department. Four major themes emerged from the responses: digitization and electronic records management, improved storage infrastructure, staff training and capacity building, and stronger records retrieval and access controls. One respondent observed that, *“Most of our records are still kept in physical files. We need to digitize more of these records and have a proper electronic system so that staff can retrieve them without searching through shelves.”* (Respondent 38). This finding aligns with Gichuki and Rotich (2019), who identified digitization as an important strategy for improving public records management. It also aligns with Datta and Muthama (2024), who showed that the transition from paper to digital records is increasingly important for managing large volumes of records.

Another respondent stated that, *“We need better storage facilities, more shelves and proper equipment because some files are crowded together, making it difficult to locate a particular record when it is needed.”* (Respondent 54). This finding corroborates Ongwenyi et al. (2018) and Maina et al. (2025), who identified infrastructure adequacy as an important consideration in managing electronic records.

4.4 Correlation Analysis

Correlation analysis examined the direction and strength of the relationship between digitization strategy and record storage practices in Nairobi City County's Urban Planning Department. Spearman's rank correlation was appropriate because some study variables deviated significantly from normality. Table 3 presents the results.

Table 3: Correlation between Digitization Strategy and Record Storage Practices

		Record storage practices
Spearman's rho Digitization strategy	Correlation Coefficient	.354**
	Sig. (2-tailed)	.004

**. Correlation is significant at the 0.01 level (2-tailed). N=66

The results revealed a positive and statistically significant relationship between digitization strategy and record storage practices ($r = .354, p = .004$). This indicates that greater application of digitization strategy is associated with better record storage practices within the department. Although the relationship was moderate rather than strong, it was statistically significant, suggesting that converting physical records into digital formats can meaningfully contribute to improved storage, organization and retrieval of records. This finding aligns with Datta and Muthama (2024), whose study of land record digitization in Nairobi County showed that digitization is an increasingly important, though not sufficient, component of improving public records management. The moderate rather than strong correlation observed in the present study suggests that digitization alone does not automatically guarantee highly effective record storage practices. Simply converting paper records into electronic form does not, by itself, ensure proper classification, preservation, security or continued accessibility unless it is accompanied by adequate infrastructure, clear guidelines and sustained staff training, as similarly found by Mosweu (2023) in the context of Botswana's public sector digital records systems. This interpretation implies that digitization strategy in the Urban Planning Department is a necessary but insufficient condition for optimal record storage outcomes, and that its full benefits are

likely to be realized only when combined with complementary institutional investments.

4.5 Regression Analysis

Binary logistic regression analysis was conducted to determine the extent to which digitization strategy predicted the likelihood of effective record storage practices in Nairobi City County's Urban Planning Department. This technique was appropriate because record storage practices were dichotomized into 'Disagree' and 'Agree' categories for predictive analysis, and the data did not fully meet the normality assumptions required for ordinary least squares regression. Tables 4, 5, and 6 present the results.

Table 4: Regression model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	52.417 ^a	.128	.196

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

The -2 log-likelihood value of 52.417 indicates the overall fit of the logistic regression model, with the model converging successfully during estimation. The Nagelkerke R² of .196 indicates that digitization strategy alone explains approximately 19.6 percent of the variation in record storage practices, with the remaining variation attributable to other factors not included in the model, such as staff attitudes, leadership support and broader institutional infrastructure. This finding is consistent with Mosweu (2023), who similarly found that digitization strategy explains a meaningful but partial share of variation in record storage outcomes, given the multiple institutional factors that influence effective records management in public sector settings.

Table 5: Classification Table^a

			Predicted		Percentage Correct
			Record storage practices		
			Disagree	Agree	
Step 1	Observed				
	Record storage practices	Disagree	Agree		
		Disagree	3	4	42.9
		Agree	66	53	89.8
	Overall Percentage				84.8

a. The cut value is .500

The classification table shows that the model achieved an overall classification accuracy of 84.8 percent. The model correctly classified 3 (42.9%) of the 7 respondents who disagreed that record storage practices were effective, and correctly classified 53 (89.8%) of the 59 respondents who agreed, indicating that the model was considerably more accurate in predicting agreement than disagreement. Overall, the model correctly predicted 56 out of 66 cases.

Table 6: Variables in the equation

Step 1 ^a	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Digitization strategy	1.842	.612	9.062	1	.003	6.312	1.902	20.943
Constant	-3.215	1.204	7.128	1	.008	.040		

a. Variable(s) entered on step 1: Digitization strategy.

Table 6 shows that digitization strategy had a positive and statistically significant effect on the likelihood of effective record storage practices ($B = 1.842$, $S.E. = .612$, $Wald = 9.062$, $df = 1$, $p = .003$, $Exp(B) = 6.312$). The odds ratio indicates that, holding other factors constant, a one-unit increase in digitization strategy was associated with approximately six times higher odds of reporting effective record storage practices. This finding supports rejecting the null hypothesis, confirming that digitization strategy significantly influences record storage practices in Nairobi City County's Urban Planning Department. The result corroborates Datta and Muthama (2024), who demonstrated that digitization initiatives, when consistently applied, meaningfully strengthen the management and accessibility of public land and planning records in Nairobi County, and Saffady (2021), who emphasizes that systematic digitization is a foundational strategy for improving the integrity and usability of institutional records.

5. Conclusion

Overall, the findings demonstrate that digitization strategy plays an important role in improving record storage practices within Nairobi City County’s Urban Planning Department, although its implementation remains constrained by infrastructural, procedural and capacity-related challenges. While record storage practices were generally rated positively, particularly in relation to long-term preservation, accuracy and protection of records, weaknesses were evident in retrieval efficiency and the consistent application of digitization processes. The study established a positive and statistically significant relationship between digitization strategy and record storage practices, while the regression analysis further confirmed that digitization strategy significantly increased the likelihood of effective record storage practices. However, the model's relatively modest explanatory power indicates that digitization alone is insufficient to achieve optimal records management outcomes. The study therefore concludes that realizing the full benefits of digitization requires complementary investments in adequate ICT and storage infrastructure, clear digitization guidelines, continuous staff training, standardized processes and effective access and retrieval mechanisms.

6. Recommendations

Based on the research findings, the following recommendations are proposed. Nairobi City County's Urban Planning Department should invest in adequate scanning equipment and supporting ICT infrastructure to eliminate equipment-sharing bottlenecks and accelerate digitization across all units. Management should develop and formally adopt clear digitization guidelines and standard operating procedures to ensure digitization processes are applied consistently across departmental units, rather than depending on individual officers' initiative. The department should institutionalize continuous, structured training programmes on digitization and electronic records management for all relevant staff, including architects,

planners, records officers and ICT personnel, to strengthen both technical competence and consistent adoption of digital systems. Additionally, the department should prioritize digitizing the remaining stock of older physical planning records and ensure digital records are properly indexed and integrated with existing registers to further reduce retrieval time and enhance accessibility. Finally, county leadership should consider allocating dedicated budgetary resources for digitization infrastructure and staff capacity development, recognizing digitization strategy as a foundational investment for improving record storage practices and, by extension, service delivery within the department.

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