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Hybrid Archival Practices in the Bureaucracy of Population Administration Services: A Qualitative Study of the Dispendukcapil of Malang City

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This study examines hybrid archival management practices within the population administration service bureaucracy at the Dinas Kependudukan dan Pencatatan Sipil of Malang City as a phenomenon reflecting the tension between the public service digitalization agenda and the need for conventional administrative control. Although population information systems have been implemented to support electronic-based services, physical and digital archiving practices continue to be carried out simultaneously through processes of printing, manual verification, physical recording, rescanning, and digital storage. This study aims to elucidate how hybrid archival practices are executed in the day-to-day operations of the population bureaucracy, the organizational rationality underlying their persistence, and their implications for administrative burden, accountability, and the sustainability of records governance. The research employs a qualitative approach with a case study design. Data were collected through semi-structured in-depth interviews with ten purposively selected informants, direct observation of service and archiving processes, and documentation studies of procedures and archival records. The results indicate five main findings: hybrid archiving has been institutionalized as an administrative work routine; dual record-keeping is maintained as a mechanism for organizational security and legitimacy; hybrid archival practices generate significant administrative burden and work pressure; employees develop informal work practices as adaptation strategies; and employee perceptions of hybrid archiving are ambivalent regarding digital efficiency versus physical accountability. This study implies the need for more realistic and contextual archival policies, strengthening of cross-unit records governance, and enhancement of human resource capacity and digital record legitimacy to ensure that public archival transformation proceeds effectively and sustainably.

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INTRODUCTION

Digital transformation in public archive management has become a critical concern in public administration and records management studies, in line with increasing demands for service efficiency, bureaucratic accountability, and information security (Kurniadi et al., 2025; Sudrajat et al., 2023). However, in practice, archival digitalization does not always proceed linearly as assumed by the normative view that technology utilization will automatically simplify bureaucratic work processes (Darmansah et al., 2024; Farhan, 2024; Husnita & Kesuma, 2020). In many public sector organizations, including local governments, the hybrid archival approach has actually developed as the dominant management model, namely the simultaneous management of physical and digital archives. This model emerges as a response to the need to maintain the authenticity and legal validity of physical documents while simultaneously meeting demands for rapid access and data integration through digital systems (Hermanto et al., 2024; Rumahorbo et al., 2025). The hybrid approach allows organizations to maintain the legal integrity of archives while obtaining flexibility in information management and utilization, yet at the same time, it forms a more complex configuration of administrative work (Listiyani & Alamsyah, 2019; Saefulrahman et al., 2025).

This phenomenon is clearly reflected in the archival management practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City. Although population information systems such as SIAPEL and SIAK have been implemented to support electronic-based services, documents submitted digitally must still be printed, manually verified, recorded in physical administration, and subsequently rescanned to be stored as digital archives. This work pattern indicates that digitalization does not fully replace manual practices but rather creates a new layer of repetitive work within the population service routine. Such a layered workflow indicates that digital transformation takes place within a bureaucratic framework that still relies heavily on conventional administrative control, thereby resulting in hybrid archival practices that are complex and diverse in their execution.

In the literature, digital archive management is often positioned as a strategy for public administration modernization capable of increasing service speed and bureaucratic transparency (Diva Sastradiredja & Wasisto, 2021; Edy Susanto et al., 2023; Iqbal et al., 2024). A number of studies also show that the hybrid archival model is often chosen as an adaptive solution when technological infrastructure readiness and organizational resources do



not yet fully support total digitalization (Kurniadi et al., 2025; Puspasari & Rohmawati, 2020). However, these studies generally still emphasize aspects of system implementation, service efficiency, and technological performance, while attention to how hybrid archival practices are carried out in the daily work of employees remains relatively limited. Consequently, archival digitalization is often understood as a technical solution, not as an administrative practice intertwined with work culture, organizational rationality, and power dynamics within the bureaucracy.

The condition of hybrid archives at the Dinas Kependudukan dan Pencatatan Sipil of Malang City also has direct implications for work dynamics and employee administrative burden. The process of printing digital documents, rescanning physical archives, manual recording in specific logbooks, and uploading files one by one into the system creates work repetition that prolongs the archiving flow and increases workload. Limitations in infrastructure, such as inadequate computers and scanning devices, further slowdown the work process and encourage the accumulation of physical archives in the workspace. In certain situations, archival tasks are even delegated to interns, which potentially raises issues regarding the consistency and quality of archive management. These practices demonstrate that hybrid archiving is not merely a technical issue but reflects how the bureaucracy maintains control, accountability, and a sense of administrative security amidst digitalization demands.

Nevertheless, most previous research remains dominated by a technocratic approach that places digitalization as an instrument for increasing efficiency and user satisfaction (Fitry, 2024; Raihan & Irham, 2023). This approach tends to overlook the dimension of bureaucratic praxis, particularly how hybrid archives shape administrative work dynamics, produce layered work practices, and encourage the emergence of informal mechanisms as employee responses to concurrent demands for efficiency and accountability. Thus, there is still limited empirical understanding regarding how bureaucratic organizations interpret, sustain, and reproduce hybrid archival practices within the context of public service.

The urgency of this research lies in the position of population archives as strategic documents directly related to the civil rights of the community. Repetitive and complex hybrid archival practices have the potential to pose administrative risks, such as service delays, recording errors, and archival disorder, which may ultimately affect the quality of public service. Therefore, a deeper understanding of hybrid archive management practices becomes essential for formulating archival policies and strategies that are more realistic,



contextual, and sustainable at the local government level.

The novelty of this research lies in the way it views hybrid archives not as a temporary stage toward full digitalization, but as a bureaucratic phenomenon possessing its own logic and rationality. By employing a qualitative approach, this study positions archival practice as a social and administrative process, and explores the experiences, perceptions, and adaptation strategies of employees in managing hybrid archives amidst system and resource limitations. This approach is expected to enrich the study of office administration and public administration with a perspective that is more contextual and oriented toward bureaucratic work practices.

Based on this context, this study aims to elucidate hybrid archival management practices within the population service bureaucracy at the Dinas Kependudukan dan Pencatatan Sipil of Malang City, including how physical and digital archives are executed simultaneously, the organizational reasons for maintaining such practices, and their implications for workload and employee administrative processes. Thus, this research is expected to provide a more comprehensive understanding of the dynamics of hybrid archives in public service.

METHOD

This study employs a qualitative approach with a case study design to gain an in-depth understanding of hybrid archival management practices within the population administration service bureaucracy. The qualitative approach was selected as it enables the researcher to explore the processes, meanings, and rationalities of administrative work that cannot be adequately captured through quantitative measurement, particularly in the context of digitalization that generates layered work practices (Miles et al., 2014). The subjects of this study are the employees of the Dinas Kependudukan dan Pencatatan Sipil of Malang City who are directly involved in population document management, such as service counter officers, file verification staff, population information system managers, and archival staff in the archive storage unit. The selection of these subjects is based on the Department's strategic position as an agency producing population records with high legal value and standing at the forefront of public service digitalization implementation, such that hybrid archival practices in this institution tangibly reflect the tension between digital efficiency demands and conventional administrative control needs. This research design is expected to map hybrid archival work patterns, identify the organizational logic underlying dual recording practices,



and provide a conceptual understanding of the implications of hybrid archives on workload, administrative efficiency, and population records governance.

Participants and Data Collection

The population in this study comprises all employees of the Dinas Kependudukan dan Pencatatan Sipil of Malang City involved in population administration services and records management, both at the central office level and village service units. From this population, the research sample was determined purposively with approximately ten informants, referring to the principle of information-rich cases (Creswell & N.Poth, 2018), namely employees who have direct and sustained involvement in hybrid archival practices. Informant criteria include: 1) employees serving as population service counter officers; 2) General Affairs staff handling recording, distribution, and document administration; 3) archivists and archive warehouse managers; 4) operators or managers of population information systems (SIAK and/or SIAPEL); and 5) Department employees assigned to villages and involved in receiving, scanning, and sending applicant files to the central office. The selection of informants with these criteria is intended to represent the entire chain of records management, thereby enabling the researcher to capture variations in practices, role divisions, and work dynamics within the hybrid archival system.

Data were collected through semi-structured in-depth interviews, direct observation, and documentation studies. Semi-structured interviews were used to explore employee experiences and work rationalities, with question indicators covering: 1) the workflow of physical and digital archive management in population services; 2) reasons for the implementation of dual recording and storage; 3) technical and administrative obstacles faced in hybrid archival practices; 4) employee adaptation strategies in completing archival workloads; and 5) employee perceptions of efficiency, accountability, and the sustainability of records management. Observation was conducted directly and limited to service and archiving processes, ranging from file reception, verification, printing, scanning, uploading to the system, to archive storage, to identify gaps between formal procedures and actual practices. Documentation studies included the review of standard operating procedures, archive logbooks, and other supporting documents. The entire data collection process was carried out in stages and complementarily to ensure data depth, method triangulation, and the validity of research findings.



Data Analysis

Data analysis was conducted in stages once all in-depth interview, observation, and documentation data were collected. The initial stage began with the verbatim transcription of interview results to maintain the integrity of meaning and context of informant experiences, followed by a data familiarization process through repeated reading and initial notes analytical. This stage is crucial in qualitative research as it allows the researcher to understand patterns, contradictions, and nuances of bureaucratic work practices in depth before entering the coding process (Braun & Clarke, 2022). At this stage, observation and document data were used as supporting contexts to enrich the understanding of informant narratives, particularly in identifying gaps between formal archive management procedures and actual practices in the field.

The subsequent stage was the systematic data coding process using a thematic analysis approach, initiated with open coding to identify units of meaning relevant to hybrid archival practices, administrative burden, workflow fragmentation, and employee adaptation strategies. These initial codes were then grouped and reduced through axial coding to build relationships between categories and identify more conceptual thematic patterns. This process allows the researcher to move from empirical description toward interpretative analysis, such that archiving practices are not merely understood as technical activities, but as organizational practices shaped by bureaucratic rationalities and specific structural conditions. Analysis validity was strengthened through source and method triangulation by comparing interview findings, observation results, and internal documents to ensure data consistency and credibility (Braun & Clarke, 2022; Creswell & N.Poth, 2018).

The final stage of data analysis focused on interpreting findings by linking emerging main themes with the conceptual framework and literature related to digital archive management and public bureaucracy. In this stage, the researcher examined how hybrid archival practices are maintained, negotiated, and interpreted by employees within the context of infrastructure limitations and service accountability demands. The analysis was not directed at generalizing findings, but rather at producing a deep contextual understanding of administrative work dynamics and their implications for population records governance. This analytical approach aligns with the view that qualitative research plays an important role in uncovering social and organizational processes hidden behind policy implementation and technological systems in the public sector (Creswell & N.Poth, 2018). Thus, the analysis results are expected to contribute conceptually to the study of office administration and



records governance, particularly in understanding the complexity of hybrid archival practices in public service bureaucracies.

RESULTS AND DISCUSSIONS

Data analysis yielded five main themes reflecting hybrid archival management practices within the population administration service bureaucracy at the Dinas Kependudukan dan Pencatatan Sipil of Malang City. These themes not only describe technical archival processes but also reveal organizational rationality, administrative burden, and employee adaptation strategies in responding to the demands of public service digitalization. Each theme is presented as an interpretation of the empirical experiences of informants and demonstrates the interconnection between archival practices and the organizational context that shapes them.

Hybrid Archival Practices as Administrative Work Routines

The management of physical and digital archives at the Dinas Kependudukan dan Pencatatan Sipil of Malang City is carried out simultaneously and has become part of established administrative work routines. Interview results indicate that in a single service process, employees consistently perform digital document printing, manual verification, physical recording, and rescanning for electronic archive needs. An informant explained,

“If files come in online, we still have to print them, check them manually, record them, and then later scan them again to be entered into the system...” (E.1)

Similar statements were also made by other officers who mentioned that this flow is considered a standard work procedure,

“Indeed, the work has been like that from the beginning; it is digital but there is still a physical aspect, we cannot immediately trust files alone...” (E.3)

These excerpts indicate that hybrid archiving is not perceived as a transitional stage toward full digitalization, but as a work pattern that is institutionalized and collectively accepted by employees as part of administrative obligations.

Furthermore, these hybrid archival practices form a fragmented workflow, where a single population service gives rise to a series of work stages scattered across units, time, and archival media. An informant from the General Affairs unit stated,

“The file rotates, from the counter, to General Affairs, to the archives, sometimes it goes back again if something is missing, so the process is long.” (E.5)



This fragmentation is also reinforced by the division of system authority between units, as revealed by a village officer,

“We in the village can only upload; for validation, it must still be the central office, so we also send the physical files.” (E.7)

These findings demonstrate a close link between hybrid archival practices and workflow fragmentation, where digitalization does not simplify processes but rather adds layers of coordination and document movement. Such fragmentation becomes an inherent character of hybrid archival practices executed within the population bureaucracy structure.

In this context, hybrid archives function as a balancing mechanism between digital service demands and persisting conventional administrative needs. Employees interpret the existence of physical archives as a form of administrative security and a control tool that provides certainty in population document management. This is reflected in the statement of an informant who mentioned,

“If there is a physical copy, we are calmer; if at any time there is a problem, it can be shown.” (E.2)

This meaning indicates that hybrid archival practices are not maintained solely due to technological limitations, but because they function as instruments of legitimacy and administrative security for employees. Thus, hybrid archives can be understood as organizational practices institutionalized to manage the tension between digitalization and bureaucratic accountability, while simultaneously reflecting how public organizations rationalize administrative work in the context of population services.

Organizational Rationality in Maintaining Dual Record-Keeping

Dual recording and storage of archives at the Dinas Kependudukan dan Pencatatan Sipil of Malang City are not maintained solely due to technological system limitations, but are rooted in a bureaucratic organizational rationality that places prudence and administrative certainty as top priorities. Interview results show that physical archives are perceived as a form of evidence that is more reliable than digital archives alone. An informant stated,

“If we only rely on the system, we worry that at any time data might be lost or unreadable, so the physical copy is still kept.” (E.4)

“Physical documents are our safeguard; if there is an examination or complaint, what is usually sought is the printed archive...” (E.6)

These excerpts indicate that the decision to maintain physical archives is not based on individual preference, but on organizational logic that links document security with the existence of material evidence that can be shown directly.



This organizational rationality is increasingly visible in how employees interpret administrative risks and potential sanctions. Interviews reveal concerns that archival errors or loss could impact personal or institutional responsibility. An informant explained,

“...If there is a problem, the question will definitely be who held the file, so we must have complete proof...” (E.1)

“...It is safer if there are both, digital and physical, so if one has a problem, there is still a backup...” (E.8)

These statements indicate a link between the variable of organizational rationality and hybrid archival practices, where dual recording functions as a security mechanism against system uncertainty and as an organizational strategy to minimize the risk of administrative errors. In this context, technical efficiency becomes a secondary consideration compared to efforts to maintain accountability and protection for employees.

Furthermore, dual recording also functions as a bureaucratic control instrument that reproduces conventional administrative work patterns amidst digitalization. Physical archives allow the organization to conduct tracking, verification, and multi-layered audits, which are viewed as essential for maintaining the legitimacy of administrative decisions. An informant stated,

“If there is a physical copy, the flow is clear, who received it, who processed it, everything can be traced.” (E.9).

These findings show that hybrid archival practices cannot be understood merely as a failure of digitalization, but as a manifestation of organizational rationality seeking to maintain control and administrative order. Thus, dual recording becomes a conscious organizational strategy to negotiate digitalization demands with the need for legitimacy, accountability, and bureaucratic security in population services.

Administrative Burden and Its Impact on Archival Performance

Interview data indicate that hybrid archival practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City generate significant administrative burden for employees, particularly in the form of time burden and repetitive work. The processes of printing, scanning, uploading files, and manual recording often cannot be completed during service hours, so they must be continued after the counters are closed. An informant stated,

“...If service hours are still open, our focus is on the community first; scanning and uploading matters are usually only done after that...” (E.3)

“...Sometimes archives pile up, because the work takes a long time and must be done one by one...” (E.6)



These excerpts show that administrative burden relates not only to work volume but also to time constraints that force employees to postpone archive management to maintain the smoothness of direct service to the community.

In addition to time burden, hybrid archival practices also give rise to cognitive burden and psychological pressure that affect archival performance. Employees must ensure that every administrative stage is carried out correctly and completely to avoid errors that potentially impact personal accountability. An informant revealed,

“The fear is if one file is missed or uploaded incorrectly, we will be the ones blamed...” (E.1)

This pressure is reinforced by the complexity of fragmented workflows, as expressed by another informant,

“There are many files, the categories are different; if one is not focused, they can be misplaced...” (E.8)

These findings indicate that the administrative burden in hybrid archival practices is not only technical in nature but also affects the mental aspects of employees who must constantly manage the risk of error in a complex system.

This high administrative burden has a direct impact on archival performance and employee work priorities. Interviews show that archive management is often positioned as secondary work compared to direct service to the community. An informant stated,

“...The important thing is that the community is served first, archives can follow later...” (E.5)

Consequently, the archiving process is frequently delayed and files accumulate in the workspace, which ultimately increases the workload in the future. This condition demonstrates a close link between the variable of administrative burden and workflow fragmentation, where procedural complexity enlarges work volume and encourages systematic delays in archive management. Thus, hybrid archival practices not only affect administrative efficiency but also form a hierarchy of work priorities that impacts the sustainability of population records governance.

Informal Work Practices as Employee Adaptation Strategies

Interview results indicate that in facing high workloads and infrastructure limitations, employees of the Dinas Kependudukan dan Pencatatan Sipil of Malang City develop various informal work practices as a form of adaptation to non-ideal work conditions. These practices include delaying the archive scanning process, piling up physical files in the workspace, and using personal devices to scan documents. An informant stated,



“The scanner in the office is limited, so sometimes I use my own mobile phone so that files do not pile up too much.” (E.7)

“If there are already too many, usually scanning is postponed until there is free time...” (E.4)

These excerpts show that informal work practices emerge as a direct response to facility limitations and time pressure, not as a form of neglecting work responsibilities.

Additionally, informal work practices are also visible in the delegation of archival tasks to interns who are routinely accepted by the agency. Interviews reveal that the presence of interns is often utilized to assist with the scanning process and the management of accumulated archives. An informant explained,

“If there are interns, we usually ask for help scanning files, because the work is indeed plentiful...” (E.2)

However, this practice is also accompanied by an awareness of the limitations in competence and responsibility of the interns, as expressed by another informant,

“Interns help, but we remain responsible if there are errors...” (E.9)

These findings indicate that informal work practices do not fully replace the role of employees, but become a collective strategy to manage workload within a framework of bureaucratic responsibility that is maintained.

Conceptually, these informal work practices reflect the close relationship between the variable of informal work practices and employee adaptation strategies in the context of hybrid archival practices. Employees actively adjust their way of working to maintain the continuity of population services amidst infrastructure limitations, workflow fragmentation, and administrative accountability pressures. An informant stated,

“...The important thing is that the service keeps running, even though the method must be adjusted to conditions...” (E.5)

This statement indicates that informal practices are understood as a rationalization of work, not merely as a deviation from rules. Thus, informal work practices in hybrid archive management can be understood as bureaucratic adaptive mechanisms that allow the organization to function, despite facing structural limitations and procedural complexity.

Employee Perceptions of Efficiency and Accountability

Interview results indicate that employees interpret hybrid archival practices ambivalently in relation to work efficiency. On one hand, digital archives are perceived to facilitate data retrieval and accelerate service when the system runs normally, but on the other hand, the existence of physical archives that must be managed in parallel actually prolongs the administrative workflow. An informant stated,



“Finding data in the system is indeed fast, but after that, we still have to find the physical file as well...” (E.1).

“System-wise it looks efficient, but in practice, the work becomes double...” (E.6).

This perception indicates a link between the variable of work efficiency and hybrid archival practices, where efficiency is not understood linearly as saving time and energy, but is negotiated within a work experience that is still characterized by manual procedures and multi-layered controls.

In the aspect of accountability, hybrid archives are perceived by employees as an administrative protection mechanism that provides a sense of security in facing potential errors and internal or external audits. Physical archives are viewed as the strongest evidence to account for administrative decisions, especially when data issues or public complaints occur. An informant revealed,

“If there is a problem, the first thing sought is definitely the physical file...” (E.3)

“Paper documents are our safeguard if at any time requested by superiors or auditors.” (E.8)

These findings demonstrate the relationship between the variable of organizational accountability and the rationality of bureaucratic control, where the existence of physical archives remains the center of administrative legitimacy even though digital systems have been widely implemented.

Beyond efficiency and accountability, interviews also revealed employee perceptions regarding the sustainability of hybrid archive management in the long term. Some employees realize that dual recording practices have the potential to raise sustainability issues, particularly related to storage capacity, management consistency, and human resource regeneration. An informant stated,

“If it continues like this, archives will increasingly pile up, while human resources and tools remain limited...” (E.10).

“For the long term, it seems heavy if both continue to be run.” (E.5)

This perception indicates a link between the variable of archive management sustainability and organizational structural burden, where hybrid archives are understood not only as a current adaptive solution but also as a source of organizational challenges in the future. Thus, employee perceptions of hybrid archives reflect a critical awareness of the limits of efficiency, accountability, and sustainability in the archival practices of population bureaucracy.

Discussions



The results indicate that hybrid archival management practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City have been institutionalized as part of a complex and multi-layered administrative routine. Archive management does not merely take place in a single medium but involves simultaneous interaction between physical and digital archives through a series of printing, recording, scanning, uploading, and re-archiving processes (Husnita & Kesuma, 2020; Shinta et al., 2025). These findings demonstrate that archival digitalization does not immediately simplify workflows but rather produces new forms of repetitive work that rely on continuous human intervention (Oktafia et al., 2025; Purwaningsih et al., 2025). This phenomenon aligns with findings from global bibliometric studies showing that records management and e-government themes have become main focuses in the public archive modernization agenda, yet their implementation frequently faces technical and organizational challenges due to the coexistence of physical and digital archives within a single work system (Tenawahang & Ikasari, 2023; Tiara et al., 2023).

In the context of public organizations in Indonesia, hybrid archives function as a compensatory mechanism to bridge the limitations of digital systems with administrative accountability demands (Hidayati & Hermanto, 2025). This study shows that dual recording and the maintenance of physical archives are retained as risk mitigation strategies against potential administrative errors, system disruptions, and legal validation needs. This rationality indicates that hybrid practices are not merely consequences of technological failure but represent a structural response to bureaucratic logic that prioritizes administrative prudence and legal legitimacy. These findings are consistent with digital preservation studies in Indonesia asserting that the success of electronic archive management is heavily determined by the readiness of policies, governance, and human resources, rather than solely by the sophistication of the technology used (Meranggi & Lukman, 2024; Tenawahang & Ikasari, 2023).

The administrative burden generated by hybrid archival practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City reflects a general problem in the implementation of digital systems in the public sector. The results of this study indicate that work process duplication, infrastructure limitations, and low system integration contribute to increased manual work and the accumulation of physical archives. This condition has a direct impact on the decline of work efficiency and the emergence of delays in archive management. These findings reinforce previous research showing that limited human resource capacity and weak information system integration are primary factors hindering the



optimization of digital archive management in various public institutions, including higher education institutions and local government agencies (Habiburrahman et al., 2025; Puspitadewi & Rifqi, 2025).

Furthermore, this study found that workload pressure and facility limitations encourage employees to develop informal work practices as adaptation strategies. The postponement of scanning processes, the accumulation of physical files in workspaces, and the delegation of archival tasks to interns serve as organizational responses to the imbalance between digitalization demands and available structural capacity. This phenomenon aligns with findings in records management and digital curation literature identifying those disparities in infrastructure readiness and human resource competence often give rise to ad hoc practices as survival mechanisms in public organizations (Dika Adhitya, 2019; Karimah et al., 2022; Lestari, 2022). Thus, informal practices cannot be understood merely as deviations from procedures but as indicators of structural tension within the digital transformation process (Marlinda, 2020; Rosy et al., 2023).

Employee perceptions regarding the efficiency and reliability of hybrid archives also constitute a key finding in this study. Employees tend to view physical archives as the most credible administrative evidence, particularly in the context of population service accountability. The lack of full trust in digital systems, specifically regarding data security and system stability, drives the organization to maintain the hybrid model as a form of protection against administrative risks. This finding resonates with international qualitative studies showing that the level of organizational trust in digital systems is a primary prerequisite for the full adoption of electronic archives, and that concerns regarding legal compliance and operational resilience are often the main reasons for maintaining hybrid systems (Ngoepe et al., 2024).

Within the framework of public accountability, the results of this study confirm that physical archives are still viewed as the main pillars of legal evidence, even though digital archive systems have been implemented. Studies on digital preservation in ANRI Award-winning institutions show that migration, conversion, and replication strategies for digital archives play a crucial role in maintaining the integrity and sustainability of archives as administrative evidence (Bawono, 2022). However, findings at the Dinas Kependudukan dan Pencatatan Sipil of Malang City indicate that when digital systems are not yet fully trusted or stable, physical archives remain the primary reference in ensuring service accountability.



Moreover, employee perceptions regarding the sustainability of hybrid archive management underscore the importance of human resource capacity in supporting digital transformation. Previous research emphasizes that the successful implementation of electronic archives within an e-government framework relies heavily on the competence of archivists and employees in managing, maintaining, and understanding digital systems sustainably (Fairuz Azzahra et al., 2025; Iqbal et al., 2024; Nasution & Darmayanti, 2020). This finding aligns with the view of the Department's employees that the sustainability of the hybrid archival model can only be addressed through competence improvement, the provision of adequate infrastructure, and institutional policies that support holistic changes in work systems.

Overall, the findings indicate that hybrid archival practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City are not isolated phenomena but reflections of broader public organizational dynamics in facing the digitalization agenda. Empirical literature asserts that the success of digital transformation in records management is determined by the balance between technology, human resources, policy, and organizational structure (Adriani, 2024; Qolby & Taufik, 2025; Syahidan, 2024). Therefore, the hybrid phenomenon found in this study needs to be understood as a manifestation of the efficiency paradox in public service bureaucracy, which demands holistic policy and governance interventions to realize effective, accountable, and sustainable archive management.

Implications

Departing from the findings of this study, the practical and policy implications indicate that hybrid archive management needs to be addressed as an issue of organizational governance, not merely a technical issue of digitalization. Practically, these findings indicate the need for: 1) workflow restructuring to reduce print-scan duplication by establishing clear control points regarding when physical archives are truly needed and when digital archives can serve as the primary reference; 2) strengthening the capacity and role of archival employees through practice-based training (such as digital archive risk management, audit trails, and archive quality control), rather than mere system usage training; and 3) the provision of adequate and standardized infrastructure so that risky informal work practices (use of personal devices, delegation to interns without standards) are not continuously reproduced as long-term solutions. From a policy perspective, this study implies the need for: 1) local archival policies that explicitly recognize the existence of hybrid archives as an



actual bureaucratic condition and formulate realistic operational standards for integrated physical and digital archive management; 2) affirmation of accountability frameworks and the division of archival responsibilities across units so that workflow fragmentation does not weaken records governance; and 3) strengthening the legal legitimacy of digital archives through regulations, system audits, and data protection mechanisms that can increase organizational trust in digital systems. Thus, the implications of this study underscore that the success of archival transformation is not determined by the acceleration of digitalization alone, but by the alignment between policies, work structures, human resource capacities, and the bureaucratic logic underlying them.

CONCLUSION

This study concludes that hybrid archival management practices at the Dinas Kependudukan dan Pencatatan Sipil of Malang City are not merely technical phenomena or transitional stages toward full digitalization, but have been institutionalized as rational administrative work patterns within the framework of public service bureaucracy. Archival digitalization does not eliminate manual practices but rather produces layered work configurations that combine physical and digital archives simultaneously. This condition reflects the paradox of bureaucratic digital transformation, where demands for efficiency run parallel to the need for prudence, administrative control, and legal legitimacy. Thus, hybrid archives need to be understood as expressions of bureaucratic organizational logic seeking to balance risk, accountability, and structural limitations in population records management.

Based on the five main themes resulting from the research, the first conclusion indicates that hybrid archival practices have become administrative work routines that are accepted and collectively reproduced by employees. Digital document printing, manual verification, physical recording, and rescanning are executed as procedures considered standard, while simultaneously forming fragmented workflows across units and archival media. Second, dual recording is maintained not solely due to technological limitations, but is driven by organizational rationality that places physical archives as instruments of administrative security, responsibility tracking, and protection against the risk of errors or sanctions. This finding asserts that the sustainability of hybrid archives is closely related to risk perception and bureaucratic control mechanisms that remain strong in population services.



The third and fourth conclusions show that hybrid archival practices generate significant administrative burden, whether in the form of time burden, repetitive workload, or employee psychological pressure due to workflow complexity and accountability demands. This burden encourages archive management to become a secondary task compared to direct service to the community, thereby potentially weakening the sustainability of records governance. Fifth, this study found that employees develop informal work practices as adaptation strategies to infrastructure and resource limitations, such as scanning delays, the use of personal devices, and the delegation of tasks to interns. These practices reflect bureaucratic adaptive ability, yet simultaneously signal the presence of structural tension and new risks in records governance. Employee perceptions of hybrid archives are ambivalent: digital archives are viewed as increasing accessibility, while physical archives remain considered the main pillars of accountability and administrative legitimacy.

Based on these findings, this study recommends the need for more realistic and contextual policy and archival management practice arrangements, by positioning hybrid archives as actual bureaucratic conditions that need to be managed consciously, rather than ignored or forced to be eliminated quickly. Strengthening human resource capacity, clarifying the division of responsibilities across units, and increasing the reliability and legitimacy of digital archive systems are primary prerequisites for reducing administrative burden and governance risks. For future research, it is suggested to conduct comparative studies across regions or public service sectors to test whether similar hybrid archival logic is reproduced in other bureaucratic contexts. Furthermore, subsequent research can explore dimensions of power, accountability, and legal risk in hybrid archival practices, as well as examine in greater depth the relationship between digital system design and bureaucratic work rationality in public archive management.

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