



Lean Office in Administrative Billing and Vendor Payment Processes: A Systematic Literature Review

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Abstract

Administrative billing and vendor payment processes frequently experience delays due to document waiting times, repeated verification, and fragmented information flows. Although Lean Office has been widely adopted to reduce non-value-added activities in office environments, evidence regarding its implementation remains fragmented, particularly in billing and vendor payment processes. This study systematically reviews Lean Office implementation in administrative activities, focusing on billing, document verification, approval flows, and vendor payments. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines, literature was collected from Scopus and Google Scholar using keywords related to Lean Office, administrative waste, billing, vendor payments, document verification, and non-value-added activities. From 59 initial records, eight articles met the inclusion and quality criteria and were analyzed using thematic synthesis. The findings reveal that waiting, extra processing, defective information, and document transportation are the most common forms of waste. Value Stream Mapping, Process Activity Mapping, root cause analysis, and standardization are the predominant analytical approaches. The review links major waste categories with practical improvement strategies, including document standardization, simplified approval procedures, digital integration, service-level targets, and early document validation. These findings provide practical guidance for redesigning billing and vendor payment processes to improve administrative efficiency, transparency, and process reliability.

Keywords: Administrative Billing, Lean Office, Systematic Literature Review, Vendor Payment, Waste

1. INTRODUCTION

The efficiency of administrative processes is a critical factor in maintaining organizational performance, particularly in sectors that depend on rapid information flows, document accuracy, and cross-functional coordination. From a lean perspective, administrative activities are viewed not merely as support functions but also as components of a value stream that can affect organizational effectiveness when they involve waiting, duplication, rework, and other non-value-added activities [1], [2], [3]. In organizations with complex, geographically dispersed business processes, administrative inefficiencies can result in delayed decision-making, delayed execution of work, and reduced quality of internal and external services [3], [4]. Therefore, administrative process improvement should be positioned as part of broader efforts to enhance overall organizational performance rather than merely improve documentation procedures.

This condition is relevant to PT. Perusahaan Listrik Negara (PLN) (Persero), particularly its Unit Induk Wilayah Nusa Tenggara Timur (UIW NTT), or East Nusa Tenggara Regional Main Unit, which manages electricity systems from generation to customer service across an archipelagic region with numerous isolated systems. These geographical characteristics increase the complexity of managing generation, operation and maintenance (O&M), budget control, and vendor payment administration. In the generation context, the efficient administration of vendor invoices is inseparable from the effective execution of O&M activities because work completion, document completeness, verification, approval, and payment are interconnected within a single operational flow. This process combines manual and digital stages, cross-unit verification, multilevel approval, and the use of the Vendor Invoicing Portal (VIP), thereby creating the potential for administrative waste at various points.

Operationally, vendor payment administration occupies a strategic position because it is directly linked to budget absorption, the smooth execution of generation activities, and, ultimately, unit performance. Low payment realization not only reflects administrative problems but may also delay O&M activities, component replacement, and material distribution to isolated areas while adversely affecting the cash flow of vendors that support generation operations. In addition, payment delays may disrupt the continuity of operational activities

and indirectly affect the achievement of management Key Performance Indicators (KPIs) and generation-related operational KPIs. This condition is reflected in the 2024 realization of Generation Post 53 at UIW NTT. Although work equivalent to 99% of the operational budget ceiling had been contracted, payment realization had reached only 67%, leaving 33.13% of the contracted work unpaid. These figures indicate that administrative process problems are not minor issues but constitute substantial obstacles to the effective management of generation operations.

Under these conditions, the Lean Office approach is relevant because it focuses on eliminating non-value-added activities, reducing waste, and improving information-based process flows. Lean Office is an adaptation of Lean Thinking principles from manufacturing environments to administrative and service processes, with the aim of accelerating information flows, simplifying procedures, and improving service efficiency [1], [2], [3]. In document-intensive administrative processes involving verification, disposition, and multilevel approval, waste commonly appears in the form of waiting, extra processing, defective information, redundancy, and document inventory [4], [5]. Thus, Lean Office not only helps identify sources of waste but also provides a systematic framework for mapping current-state conditions, classifying value-added and non-value-added activities, and designing more efficient future-state processes [4], [5].

A number of previous studies have demonstrated the effective application of Lean Office across various administrative processes. Monteiro et al. reported that Lean Office implementation in public-sector organizations reduced bill payment time from nine days to 1.5 days through process mapping and the elimination of non-value-added activities [6]. Magalhaes et al. demonstrated increases of up to 84% in document search efficiency and reductions in data entry time through digital document standardization and the use of performance indicators [7]. In the energy sector, Costa et al. found that Lean Office implementation in the billing department of a power company reduced paper consumption and operational inefficiencies [8]. Wijnhoven et al. also asserted that current-state identification through Value Stream Mapping and waste analysis constitutes a fundamental stage in the design of administrative service improvements [4]. Other studies indicate that tools and methods such as 5S, which consists of Seiri (sort), Seiton (set in order), Seiso (shine), Seiketsu (standardize), and Shitsuke (sustain), Value Stream Mapping, standardized work, and service-feedback-based approaches are widely used in Lean Office implementation across sectors [9], [10], [11].

Table 1. Classification of prior Lean Office evidence used to frame the review

Evidence Group	Sector / Context	Waste or Process Focus	Relevance to this Review
Payment and billing studies [6], [8]	Public sector and energy billing departments	Approval delay, document queues, paper use, and administrative lead time	Directly informs billing and vendor payment flow, especially where payment realization depends on document completeness and approval speed.
Administrative office studies [4], [7]	Administrative services and university offices	Document search, repeated data entry, rework, and weak standardization	Provides evidence for upstream document standardization, information visibility, and process mapping.
Public service and support-process studies [9]-[11]	Public services, distribution, warehouse support, and cross-functional operations	Interrelated waste, operational handoffs, service feedback, and prioritization	Helps explain how administrative waste spreads across units and why improvement must combine mapping, root cause analysis, and prioritization.
Value-stream framework [5]	Lean and value-stream analysis literature	Identification of value-added and non-value-added activities	Provides the analytical foundation for classifying administrative activities and selecting appropriate Lean Office tools.

Although these studies provide useful evidence, their findings remain dispersed across various sectors and process types, including public administration, university offices, warehouse support functions, billing departments, and general service environments. More specifically, limited synthesis has been conducted to connect dominant forms of administrative waste, Lean Office tools, and improvement strategies with the specific characteristics of billing and vendor payment processes. This limitation is important because billing and vendor payment activities integrate upstream document submission, multi-actor verification, multilevel approval, digital portal utilization, and payment realization into a single interconnected workflow.

Based on this research gap, the present study employs a Systematic Literature Review (SLR) to synthesize previous evidence regarding Lean Office implementation in administrative processes, with particular emphasis on billing and vendor payment flows. This review seeks to answer three research questions: (1) What types of waste are most frequently identified in Lean Office studies of administrative processes? (2) What tools and analytical approaches are most commonly applied? and (3) What improvement strategies are consistently recommended in the literature? The study is expected to provide a theoretical contribution by consolidating evidence on Lean Office implementation in administrative systems. It is also expected to provide

a practical contribution by offering an implementation-oriented basis for redesigning billing and vendor payment processes in complex organizations, particularly those that increasingly rely on digital administrative systems.

2. MATERIAL AND METHOD

This study employed a Systematic Literature Review (SLR) design to synthesize empirical findings on Lean Office implementation in administrative processes. The review procedure followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 framework, which comprises the stages of identification, screening, eligibility assessment, and final inclusion of relevant studies [12]. The review focused on studies addressing administrative waste, document flows, billing processes, approval flows, office efficiency, vendor payments, and other closely related administrative processes, as illustrated in Figure 1.

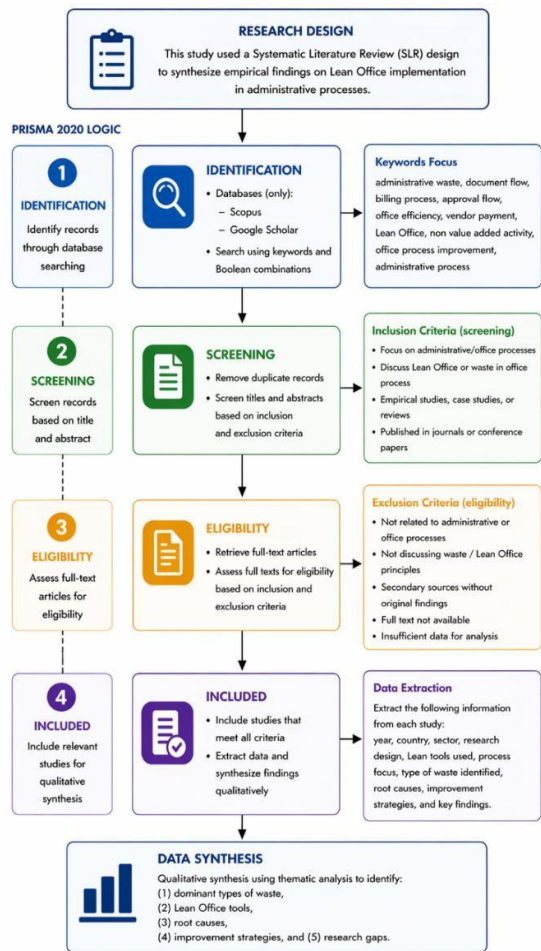


Figure 1. Research Methodology

2.1. Data Sources and Search Strategy

Literature searches were conducted using Scopus and Google Scholar. The searches employed combinations of the following keywords: “Lean Office,” “administrative waste,” “office process improvement,” “billing process,” “vendor payment,” “document verification,” and “non-value-added activity.” Boolean operators were used to identify both general studies on Lean Office and studies focusing specifically on administrative payment processes. The search included journal articles and conference papers published up to 2025, with particular emphasis on studies published from 2015 to 2025. However, seminal references on Lean principles and value stream concepts that were essential for analytical classification were also retained.

The search process was systematically documented to enhance transparency and replicability. Records were initially identified through database searches and subsequently screened based on their titles and abstracts. The full texts of potentially relevant papers were then retrieved, and final inclusion decisions were made after assessing the alignment between the content of each paper and the focus of the review in illustrated in Table 2.

Table 2. Search Strategy and Initial Literature Records

Database / Source	Main Search Terms	Search Focus	Initial Records
Scopus	lean office OR administrative waste OR office process improvement	Broad Lean Office and administrative waste literature	18
Scopus	lean office AND process improvement AND administrative services	Administrative-service process improvement	14
Google Scholar	lean office billing process vendor payment waste	Billing, payment, and document- intensive administrative processes	27
Total	-	-	59

2.2. Inclusion and Exclusion Criteria

The inclusion criteria were as follows. (1) Studies explicitly discussed Lean Office or lean-based improvements in administrative, office, service-support, billing, or document-intensive processes. (2) Studies reported types of waste, process-mapping tools, process-improvement actions, or findings transferable to administrative contexts. (3) Full-text articles were available for review. (4) Publications provided sufficient methodological information and research findings for data extraction. The exclusion criteria were as follows. (1) Studies focused exclusively on manufacturing without discussing office or administrative processes. (2) Conceptual essays did not present operational findings. (3) Records were duplicates. (4) Papers provided insufficient descriptions of their methods or results. (5) Study findings could not be meaningfully connected to administrative process improvement as illustrated in Table 3.

Table 3. Inclusion and Exclusion Criteria

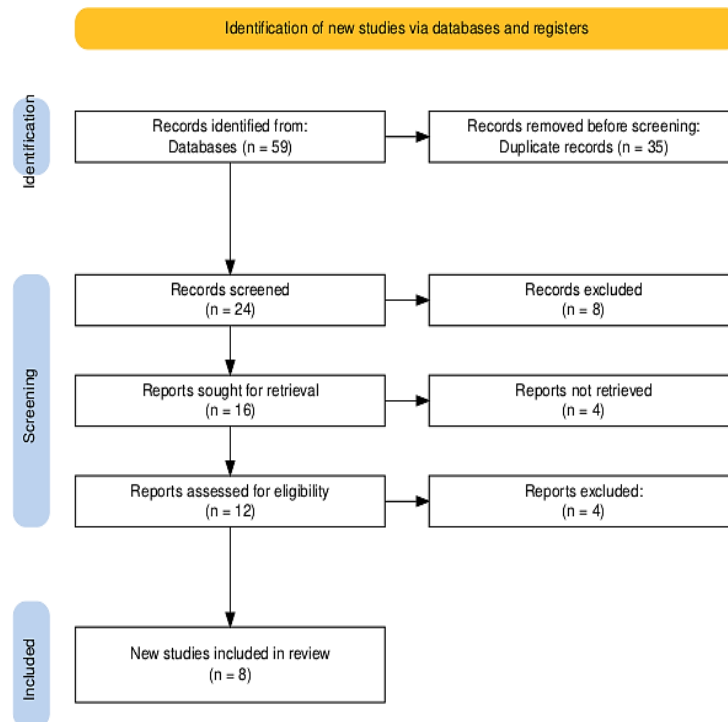
Criterion	Inclusion	Exclusion
Topic scope	Lean Office, administrative process, billing, document flow, approval flow, support services, or closely related office activities	Pure manufacturing lean without office, service-support, or administrative context
Evidence type	Empirical study, case study, conference paper with findings, or methodological framework that supports waste/tool classification	Opinion paper, conceptual note only, or paper without operational findings
Accessibility	Full text available for review and data extraction	Abstract only or inaccessible full text
Publication scope	Publications up to 2025, with priority to recent studies and retention of seminal Lean/VSM references when analytically necessary	Irrelevant or outdated studies without direct contribution to the review focus
Data sufficiency	Clear description of process context, Lean tools, waste categories, improvement actions, or key findings	Insufficient data for extraction or synthesis

2.3. Selection Procedure

The initial search identified 59 records from the selected databases. After duplicate records were removed and title and abstract screening were conducted, 24 studies remained and were carried forward to the next stage. From these, 16 reports were sought for retrieval, but 4 reports could not be retrieved in full text, leaving 12 studies for eligibility assessment through full-text review. At this stage, papers were excluded when they did not sufficiently discuss waste in office or administrative processes, did not present clear findings on process improvement, or lacked adequate methodological and result descriptions to support comparative analysis. At the end of the selection process, 8 studies were included in the final synthesis. This final selection highlights that the review prioritized relevance to administrative process improvement and transferable Lean Office evidence rather than sector similarity alone, so studies from public service, university administration, distribution support, and billing departments were retained when they offered meaningful insights for the research focus. The PRISMA Review Procedure is shown in Figure 2.

2.4. Quality Appraisal of the Reviewed Studies

To strengthen the credibility of the synthesis, the eligible full-text studies were assessed using a simple quality-appraisal procedure. The appraisal was not intended to rank the studies statistically, but to ensure that each included article provided sufficient information for comparison and thematic interpretation. Four criteria were applied: topical relevance, methodological clarity, clarity of Lean Office tools or waste categories, and extractability of improvement findings. Each criterion was assessed as met or not met. Studies were retained when they met at least three of the four criteria and when the missing criterion did not prevent the extraction of the main evidence. In illustrated Table 4. is procedure helped ensure that the final synthesis was based on studies that were relevant, transparent, and usable for cross-study comparison [12], [13].

**Figure 2.** PRISMA Review Procedure**Table 4.** Quality Appraisal Criteria Applied During Eligibility Assessment

Quality criterion	Assessment focus	Role in the synthesis
Topical relevance	The study discusses Lean Office, administrative waste, document flow, billing, payment, approval, or service-support processes.	Ensures that the article fits the administrative process focus of the review.
Methodological clarity	The study explains its case context, data source, analysis procedure, or process-mapping approach.	Supports credibility and allows the reader to understand how findings were produced.
Waste/tool clarity	The study identifies Lean tools, waste categories, bottlenecks, root causes, or process-improvement actions.	Allows comparison of dominant waste and analytical tools across studies.
Extractable findings	The study provides outcomes, recommendations, or transferable insights related to process efficiency.	Enables thematic synthesis and practical recommendation development.

2.5. Data Extraction and Synthesis

Data extraction in this study was carried out systematically to capture the most relevant information from each selected article in a consistent format. The extraction form included author and year, publication context, sector or organizational setting, process focus, research design, Lean tools used, dominant waste categories, root causes, improvement strategies, reported or expected outcomes, and relevance to billing and vendor payment administration. These elements were selected because they provide a clear basis for comparing how Lean Office has been applied in different administrative environments and how various studies define problems and propose solutions.

After the extraction stage, the findings were synthesized using thematic analysis to identify recurring patterns and relationships across the reviewed studies. The synthesis was structured around four main dimensions: dominant waste categories, analytical tools applied, improvement strategies, and implementation context. This approach is consistent with thematic synthesis in systematic reviews, which integrates findings across heterogeneous studies while preserving the meaning of the original evidence [13]. Because the selected studies varied in sector, process type, and research design, direct statistical aggregation was not appropriate. Narrative and thematic synthesis allowed the review to preserve contextual richness while still identifying broader patterns that could support general conclusions about Lean Office implementation in administrative processes [12], [13].

3. RESULT AND ANALYSIS

3.1. Results

The final dataset consisted of eight studies that met all inclusion criteria. The selected papers span public administration, university offices, billing departments, warehouse support, and other administrative service contexts. Although the sectors differ, the studies consistently investigate office-based process inefficiencies and therefore provide a relevant evidence base for understanding billing and vendor payment administration in illustrated Table 5.

Table 5. Characteristics of the Selected Studies

Author(s)	Sector/process context	Dominant waste or focus	Lean approach and contribution to billing/vendor payment
Monteiro et al. [6]	Public sector payment process	Waiting, non-value-added activities, approval delay	Uses VSM and waste analysis; provides direct evidence that payment lead time can be reduced by eliminating unnecessary administrative steps.
Wijnhoven et al. [4]	Administrative services	Waiting, rework, redundancy, weak information flow	Uses Lean principles and process mapping; supports current-state diagnosis before redesigning administrative services.
Magalhaes et al. [7]	Postgraduate office	Document search, data input, inconsistent document organization	Uses Lean Office tools and standardization; informs document verification and completeness control.
Costa et al. [8]	Billing department	Paper use, fragmented handoff, operational inefficiency	Applies Lean Office in billing flow; directly supports improvement of billing and administrative payment processes.
Di Pietro et al. [9]	Public service process	Waiting, rework, weak service feedback	Integrates Lean with customer feedback; supports service-level discipline and user-oriented administrative redesign.
Pacheco et al. [10]	Distribution warehouse support	Operational wastes across support processes	Uses multi-method Lean analysis; demonstrates the need to prioritize interrelated wastes across functions.
Dotoli et al. [11]	Warehouse and support analysis	Interrelated waste categories and process complexity	Uses integrated optimization; supports cross-functional analysis where administrative and operational flows interact.
Hines and Rich [5]	Value-stream analysis framework	Identification of non-value-added activities	Provides the mapping foundation used to classify administrative activities and select appropriate Lean Office tools.

3.1.1. Dominant Waste Categories

Across the selected studies, waiting emerged as the most recurrent waste. It appears in the form of document queues, approval delays, deferred verification, and interruptions between process steps. The second dominant category is extra processing, particularly repeated checking, duplicate verification, and unnecessary re-entry of data. Defective information also appears frequently, especially when incomplete, inconsistent, or outdated documents trigger rework. In several studies, document transportation and excessive handling remain relevant, especially when organizations combine physical files with fragmented digital platforms. These patterns indicate that office-process inefficiency is primarily caused by poor information flow rather than by the technical duration of a single task [4], [6], [7], [8].

The relationship among waste categories is also important. Defective information at the beginning of the process tends to create rework, rework increases extra processing, extra processing expands the number of handoffs, and handoffs create waiting queues. In billing and vendor payment processes, this chain can occur when incomplete vendor documents require repeated clarification, when verification is performed across multiple units without shared visibility, or when approval status is not transparent. Therefore, the dominant wastes should not be interpreted separately, but as mutually reinforcing sources of administrative delay in the illustrated Table 6.

Table 6. Synthesis of Dominant Waste Categories in the Reviewed Literature

Waste category	Frequency in reviewed studies	Typical manifestation	Implication for billing/vendor payment
Waiting	High	Approval queues, delayed verification, waiting for signatures, waiting for responses	Extends payment lead time and reduces the predictability of payment realization.

Waste category	Frequency in reviewed studies	Typical manifestation	Implication for billing/vendor payment
Extra processing	High	Repeated checking, duplicate approval, repeated data input, excessive status confirmation	Creates redundant administrative workload and slows down document movement.
Defective information	Moderate-High	Incomplete documents, revision loops, mismatched information, outdated document versions	Triggers rework before invoice or payment processing can continue.
Document transportation	Moderate	Physical file transfer, fragmented digital handoff, repeated document forwarding	Reduces traceability and makes document status difficult to monitor.
Inventory/backlog	Moderate	Accumulated pending files and unfinished administrative cases	Creates hidden queues that delay budget absorption and vendor payment completion.

3.1.2. Analytical Tools Used in Lean Office Studies

The review shows a strong methodological pattern. Value Stream Mapping is the most frequently used tool because it makes the overall flow of activities, waiting time, and handoffs visible. Process Activity Mapping is commonly used to separate value-added, necessary but non-value-added, and non-value-added activities. Several studies complement mapping with root cause analysis, standardization tools, and prioritization matrices to determine which problems should be addressed first. This confirms that Lean Office studies generally combine descriptive mapping with problem prioritization and practical redesign recommendations [4], [5], [10], [11].

For billing and vendor payment, the tools have complementary roles. VSM identifies the end-to-end lead time from document submission to payment realization; Process Activity Mapping clarifies whether each verification or approval step adds value; root cause analysis explains why documents are delayed or revised; and prioritization tools help organizations decide whether to improve document quality, approval logic, digital access, or monitoring discipline first.

3.1.3. Improvement Strategies Reported in the Literature

The most consistent improvement strategy is document standardization. Standard templates, checklists, and clearer information requirements reduce incomplete submissions and repetitive checking. Another common strategy is approval simplification, including reduction of redundant approval points and clearer role boundaries. Digital integration is also repeatedly recommended, particularly through shared repositories, better document visibility, and reduction of manual transfer. Some studies specifically emphasize service-level targets and routine verification schedules to control waiting time. Early document validation before entry into the next process stage is another recurring recommendation because it prevents downstream rework [6], [7], [8], [9].

These strategies are relevant because administrative payment processes depend on the quality of upstream inputs and the coordination of multiple actors. If document requirements are unclear, later stages spend time correcting errors. If approvals are excessive or roles overlap, the flow becomes slower even when the document is already complete. If digital platforms are not integrated, users may still rely on manual confirmation and repeated status checking. Therefore, Lean Office improvement should combine document discipline, approval redesign, and digital visibility rather than focusing on only one tool in illustrated Table 7.

Table 7. Recurring improvement strategies in the reviewed studies

Improvement strategy	Primary waste addressed	Expected effect	Application to billing/vendor payment
Document checklist and template standardization	Defective information and rework	Reduce revisions and increase completeness of submissions	Standardize vendor invoice, contract, work completion, tax, and supporting document requirements.
Simplification of approval points	Waiting and extra processing	Shorten lead time and reduce administrative queues	Review approval layers and remove duplicate verification while preserving internal control.
Shared digital repository or integrated document access	Transportation and waiting	Accelerate handoff and improve traceability	Create one source of document status and reduce repeated manual follow-up.
Service-level agreement for review and approval	Waiting	Create time discipline for each process stage	Set expected review time for document validation, correction, approval, and payment processing.

Improvement strategy	Primary waste addressed	Expected effect	Application to billing/vendor payment
Early document validation	Defective information and duplicate checking	Prevent mismatch before further processing	Check completeness before documents enter the approval or payment queue.

3.1.4. Publication Trends and Contextual Differences

The reviewed literature shows a gradual movement from general Lean and value-stream mapping foundations toward more context-specific applications in office, public service, billing, and support processes. Early studies and frameworks emphasized identifying non-value-added activities and visualizing process flows. Later applications increasingly emphasized document standardization, digital document control, service feedback, performance indicators, and integrated analysis across functions.

Context also influences the form of Lean Office implementation. Public sector payment processes tend to focus on reducing approval delay and administrative lead time. University and administrative offices emphasize document organization, search efficiency, and standardization. Billing departments highlight the reduction in paper-based processes and manual handoffs. Support and warehouse-related processes emphasize integrated analysis because administrative and operational processes interact closely. Billing and vendor payment processes combine these characteristics: they require document accuracy, approval discipline, inter-unit visibility, and integration between operational completion and payment administration, as illustrated in Table 8.

Table 8. Trend and contextual mapping of Lean Office implementation

Context / trend group	Main problem emphasized	Typical Lean Office response	Implication for administrative payment processes
Foundational value-stream literature [5]	Non-value-added activities are not visible without systematic mapping.	Use VSM and related tools to separate value-added and waste activities.	Provides the basis for mapping invoice, verification, approval, and payment flow.
Public sector and service settings [6], [9]	Payment or service lead time is extended by queues and repeated handoffs.	Simplify process steps, integrate feedback, and clarify service expectations.	Supports service-level targets and role clarity in payment administration.
University and office administration [7]	Document search and data input are inefficient because information is not standardized.	Standardize digital documents, templates, and performance indicators.	Supports early validation and document-completeness control.
Billing department applications [8]	Paper-based flow and fragmented handling create operational inefficiency.	Apply Lean Office tools to reduce paper use and improve document flow.	Provides direct relevance to billing flow and invoice administration.
Integrated support-process studies [10], [11]	Waste categories interact across operational and administrative functions.	Use multi-method analysis and prioritization to address critical bottlenecks.	Supports cross-unit redesign in complex vendor payment processes.

3.2. Discussion

The synthesis indicates that Lean Office studies consistently locate the core problem of administrative inefficiency in the flow of information, documents, and approvals rather than in the execution time of isolated tasks. In administrative environments, delays are commonly created when documents wait to be checked, transferred, approved, or completed before the next stage can proceed. This is why waiting repeatedly emerges as the most dominant form of waste in office and service-support processes. Studies in administrative services, public sector offices, and billing departments show that total lead time is often shaped more by idle intervals between activities than by the duration of the activities themselves, confirming that process flow inefficiency is primarily systemic rather than purely task-based [4], [6], [8].

The recurring presence of extra processing and defective information further suggests that administrative systems frequently suffer from weak standardization at the beginning of the process. Incomplete forms, inconsistent supporting documents, fragmented document versions, and repeated verification stages create process loops that amplify waiting time and reduce transparency. This pattern indicates that administrative waste categories are strongly interrelated. Poor information quality triggers rework, rework encourages repeated checking, repeated checking increases handoffs and queues, and these queues ultimately extend lead time across the entire workflow. Such findings support the interpretation that waste in office processes should be analyzed in an integrated way rather than as isolated categories, because one form of waste often becomes the direct cause of another [10], [11].

Another important finding is the consistency of the analytical toolkit across the reviewed studies. Mapping tools remain central because they make process structure, bottlenecks, handoffs, and non-value-added

activities visible in a way that routine administrative observation often cannot. However, the literature also shows that mapping alone is not sufficient to produce substantial improvement. Effective Lean Office implementation typically continues with waste prioritization, root cause analysis, standardization, and redesign of document and approval logic. Several studies emphasize that the most meaningful gains are achieved when organizations move beyond merely describing their processes and instead redesign workflows based on the critical sources of delay and duplication identified [6], [7], [8].

For administrative billing and vendor payment processes, the review offers several practical implications. First, upstream document quality should be strengthened through standardized templates, checklists, and clearer submission requirements, as many downstream inefficiencies stem from incomplete or inconsistent information. Second, approval points should be evaluated critically to preserve internal control without causing excessive delay. Third, digital visibility across units should be improved to reduce unnecessary document transportation, hidden queues, and repeated status checking. Fourth, service-level expectations for verification and approval should be established to create a more disciplined and predictable workflow. These recommendations are especially relevant for organizations whose payment performance depends on document completeness, interdepartmental coordination, and timely authorization, as shown in previous Lean Office applications in public and billing-related settings [6], [7], [8].

The findings also indicate that Lean Office implementation in modern administrative environments should be linked to digital transformation and information system integration. Digital portals, shared repositories, automated routing, dashboard-based monitoring, and electronic audit trails can reduce document transportation and improve visibility. Nevertheless, digitalization does not automatically eliminate waste. If the process logic remains fragmented, digital systems may only move old inefficiencies into electronic form, such as repeated data input, unclear status ownership, and excessive digital approval loops. Therefore, the Lean Office principle of simplifying processes before automating them remains important. In billing and vendor payment contexts, digital integration should be designed to support early document validation, real-time status visibility, role-based approval, and continuous monitoring of lead time and backlog, as illustrated in Table 9.

Table 9. Roadmap for Lean Office Implementation In Billing and Vendor Payment Processes

Implementation stage	Key Lean Office action	Digital / Administrative Practice	Expected Contribution
1. Diagnose current-state flow	Map invoice, verification, approval, correction, and payment activities using VSM or Process Activity Mapping.	Collect lead-time data, queue points, revision frequency, and responsible units.	Provides factual visibility of bottlenecks and non-value-added activities.
2. Stabilize document input	Standardize document requirements, templates, and checklists.	Embed completeness validation in the portal or submission checklist.	Reduces defective information, rework, and repeated clarification.
3. Redesign approval logic	Review approval layers and remove duplicate checks while preserving control.	Use role-based workflow, escalation rules, and service-level targets.	Shortens waiting time and clarifies ownership of each process stage.
4. Integrate document visibility	Reduce physical transfer and fragmented handoff.	Use shared repositories, status dashboards, and electronic audit trails.	Improves traceability and reduces repeated manual follow-up.
5. Monitor and improve continuously	Conduct periodic root-cause analyses and kaizen reviews of recurring delays.	Track KPIs such as lead time, backlog, revision rate, and SLA compliance.	Sustains improvement and supports evidence-based administrative control.

This review has several limitations. The selected studies come from varied sectors and do not all address vendor payment directly, so the synthesis does not imply full sectoral equivalence. Nevertheless, they share core office-process characteristics, such as document dependence, approval flow, verification stages, and coordination across multiple actors, which allow conceptual transfer to billing and payment administration. The number of articles included in the final synthesis is also limited because the review prioritized directly relevant and extractable evidence.

Several research gaps remain open for future studies. First, empirical studies on Lean Office implementation in vendor payment processes remain limited. Second, the effectiveness of specific improvement actions, such as approval simplification, early document validation, or digital repository integration, has not been compared consistently across contexts. Third, the interaction between Lean Office and digital administration, including automated workflows, e-invoicing portals, and information system integration, warrants deeper examination. Future studies may expand database coverage, add bibliometric mapping, apply more detailed quality scoring, or conduct focused empirical validation in utilities, infrastructure services, and other document-intensive operational organizations. This would strengthen both the contextual precision and practical applicability of Lean Office findings in administrative payment systems.

4. CONCLUSION

This Systematic Literature Review analyzed eight articles and methodological references on Lean Office implementation in administrative processes related to document flow, verification, approval, billing, and vendor payment. The review shows that the most frequently identified wastes are waiting, extra processing, defective information, and document transportation. These wastes are not independent; defective information can trigger rework, rework increases extra processing, and extra processing creates additional waiting and handoffs. This relationship explains why administrative inefficiency is often systemic rather than task-based.

The reviewed literature also shows that the most commonly used analytical tools include Value Stream Mapping, Process Activity Mapping, root cause analysis, standardization tools, and prioritization approaches. The improvement strategies most consistently recommended are document standardization, simplification of approval points, digital integration, service-level targets, and early validation of document completeness. These findings contribute to the development of Lean Office practice by linking waste categories, analytical tools, and improvement strategies into a practical roadmap for billing and vendor payment processes.

For modern administrative organizations, the implication of this review is that Lean Office should be implemented as an integrated redesign of information flow, document discipline, approval logic, and digital visibility. Digital transformation can strengthen Lean Office when it is used to support standardized documents, real-time status monitoring, automated routing, and evidence-based control of lead time. Future research is recommended to validate the proposed roadmap through empirical implementation in specific operational settings and to examine how digital administration, automation, and integrated information systems influence the effectiveness of Lean Office in billing and vendor payment processes.

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