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Implementation of Management Process to Achieve Municipal Solid Waste Management (MSWM) Efficiency – A Systematic Literature Review

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Abstract: Integrated Municipal Solid Waste Management (MSWM) is still a primary target in most developing countries. The performance of MSWM is influenced not only by the development of regulations and funding mechanisms but also by the preparedness of the human resources involved. The planning framework used in this study is based on the interpretation of the management process by Gunawan et al. (2021), and aligns with Terry's (1972) theory, which categorizes the management process into four functions: planning, organizing, actuating, and controlling (POAC). This research identifies and compiles key aspects and indicators of MSWM implementation, focusing on critical issues within the POAC management framework. The aim is to facilitate the identification of the most crucial elements in MSWM implementation. The POAC framework in this study was developed using the Systematic Literature Review (SLR) method. In developing countries, MSWM implementation tends to concentrate on the collection system, which falls under the actuating function. Therefore, an in-depth examination of the planning function is needed, particularly regarding how policy and financial support influence the development of effective technical plans for collection systems. The actuating function involves not only technical execution but also the enforcement of regulations and sanctions. Regular monitoring and evaluation are essential for controlling MSWM effectiveness, which in turn requires a well-organized and capable human resource system. There remains a strong need to develop an inventory of elements in each POAC dimension, as variations in study area characteristics may affect implementation outcomes.

Keywords: Municipal Solid Waste Management (MSWM), POAC (Planning, Organizing, Actuating, Controlling), Systematic Literature Review (SLR), developing countries, collection system efficiency.

1. Introduction

Integrated MSWM planning requires a thorough evaluation and management strategy to meet actual needs. However, existing research has yet to identify a consistent analytical framework to address the complex and interrelated challenges in MSWM implementation. The scientific approaches proposed often fail to comprehensively diagnose the root causes of inefficiencies.

Research developments in the field of integrated MSWM continue to grow annually. The implementation of MSWM in most developing countries remains inefficient and fragmented [1]. Many of the obstacles stem from weak policy frameworks and a lack of government confidence in implementing MSWM [2]. Moreover, local factors often disrupt the selection of appropriate technologies and systems. Erkisi-Arici et al. highlight the vital role of waste collection and sorting [3], while Mir et al. emphasize the importance of public cooperation and the quality of human resources [4].

Effective implementation of Municipal Solid Waste Management (MSWM) requires more than just technical infrastructure—it demands a well-coordinated management process that spans policy formulation, institutional coordination, operational execution, and performance monitoring. This perspective aligns with classical management theory by Terry (1972), which breaks down the management process into four key functions: Planning, Organizing, Actuating, and Controlling (POAC). The POAC framework has been widely used in public sector management research to analyze institutional performance [5][6], and offers a functional lens to assess how managerial components interact to support (or hinder) system performance.

In the context of MSWM, these functions manifest as stages of strategic regulation, institutional role allocation, system execution, and oversight. Recent interpretations by Gunawan et al. (2021) and Erkisi-Arici et al. (2021) emphasize that inefficiencies in waste management often stem not from the absence of technology or policy, but from weak managerial integration across these functions [6][3]. Therefore, adopting a management-function lens such as POAC provides a practical framework for evaluating the

coherence and effectiveness of MSWM systems.

To understand how various issues in MSWM relate to management functions, this study uses the Systematic Literature Review (SLR) method. SLR is more structured than traditional narrative reviews, which often rely on personal judgment and may miss important studies. SLR uses clear research questions, selection criteria, and step-by-step procedures to ensure the process is transparent and reliable [7].

Compared to other methods, such as scoping reviews, which are useful for getting a general overview but do not evaluate the quality of studies in depth [8], or meta-analyses, which require similar types of data and often focus only on numbers [7], SLR offers a middle ground. It allows for both broad coverage of the literature and in-depth analysis, which is important in a complex and varied field like MSWM. This makes SLR especially suitable for identifying patterns and gaps in how MSWM is managed across different contexts [9].

In the context of solid waste collection, the planning function involves policy development, investment design, and strategic foresight regarding collection routes, fleet composition, and service coverage. Alam et al. argue that the absence of long-term planning and inadequate budgeting are core reasons for inefficient collection systems [10]. The organizing function relates to institutional structuring, human resource allocation, and inter-agency coordination. Studies such as Anuardo et al. and Malakahmad et al. report that overlapping responsibilities between municipal bodies can cause service duplication or neglect in underserved areas [11][12]. The actuating function, the most heavily represented in the literature (e.g., Sasikumar et al.), covers the technical execution of solid waste collection—including operational logistics, fleet management, worker routines, and public communication. However, many of these studies focus narrowly on physical infrastructure, overlooking the role of leadership, motivation, and behavior management within the workforce [13].

Finally, the controlling function entails performance monitoring, compliance checks, and enforcement of regulations. Tura et al. note the lack of real-time data and weak monitoring indicators as key blind spots in ensuring the effectiveness of collection services [14]. By categorizing literature findings using the POAC lens, this research identifies which management dimensions are most frequently addressed, and which remain underexplored. This allows for a more targeted understanding of how to improve solid waste collection systems—not only through technical fixes, but through institutional reforms and governance strengthening. The framework also facilitates comparison across different studies and countries, highlighting context-specific needs while extracting generalizable lessons for MSWM improvement.

To accomplish this, the study adopts the SLR methodology following the guidelines of Kitchenham & Charters [15] and the Peferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework by Moher et al. [16]. This approach was chosen to ensure that Several other SLR frameworks exist, including the Collaborative and Iterative Review Method (CIRM) proposed by Boell and Cecez-Kecmanovic [17], which emphasizes an iterative, interpretive, and dialogical approach, and the SALSA framework (Search, Appraisal, Synthesis, and Analysis) introduced by Grant and Booth [18], which provides a flexible, narrative-based structure for literature reviews.

2. Materials and Methods

2.1. Materials

The management function framework for evaluating MSWM implementation in this study was developed using the Systematic Literature Review (SLR) method. SLR enables a structured approach to identifying, reviewing, evaluating, and synthesizing evidence from relevant literature [19]. This study sourced its materials primarily from the ScienceDirect database due to its extensive collection of high-quality, peer-reviewed journals in the fields of environmental science, engineering, and public management. The decision to include only studies published from 2019 onward was based on the need to capture recent developments, policy trends, and emerging challenges in MSWM—especially in the post-Sustainable Development Goals (SDGs) era and in light of disruptions caused by the COVID-19 pandemic.

A total of 48 journal articles were selected from the primary database after applying predefined inclusion and exclusion criteria. In addition, several relevant books and institutional reports were consulted to enrich the conceptual framework. These sources provided qualitative data related to key issues, aspects, and indicators in the implementation of municipal solid waste management. The initial step in the research involved collecting and screening literature that addresses the managerial challenges in MSWM, a complex issue frequently encountered by local governments, particularly in developing countries. The rationale for adopting the management function framework lies in its capacity to provide a comprehensive structure for evaluating the diverse dimensions of MSWM implementation.

2.2. Methods

2.2.1 POAC Method

Management, as conceptualized in classical theory, is a process consisting of four interrelated functions (POAC) [5]. These functions serve as the analytical lens through which MSWM

implementation issues are classified and assessed. To construct the assessment framework, references were first reviewed to extract recurrent problems and indicators related to MSWM's technical and institutional performance. The most critical elements were then synthesized and categorized according to the POAC functions. Figure 1 illustrates the conceptual model used to map and evaluate MSWM practices based on this framework. Additionally, studies from the broader field of general management theory were used to deepen the understanding of each management function and its relevance to solid waste system performance.

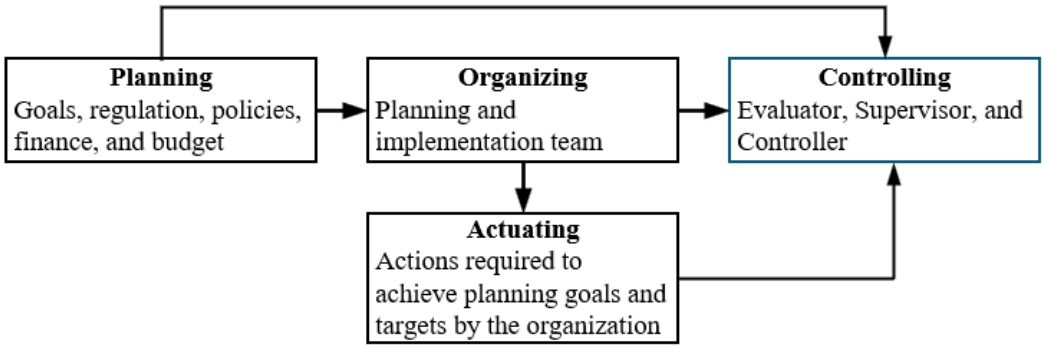

Figure 1 The conceptual framework for implementing MSWM using the POAC approach

Planning function in MSWM must be addressed comprehensively, covering regulatory, policy, funding, and budgeting aspects to ensure that the system functions effectively as intended. The primary objective is to establish an MSWM system that protects both human health and environmental sustainability. This process involves a broad range of stakeholders—including governmental and non-governmental organizations, community groups, the private sector, and other relevant actors—each of whom has specific roles and responsibilities within the MSWM framework.

The organizing function involves the systematic structuring and delegation of essential tasks, enabling the management team to execute its duties efficiently. The actuating function emphasizes the actual implementation of MSWM activities by mobilizing personnel and resources, managing workflows, ensuring communication across sectors, and promoting behavioral motivation among staff and the public. It includes aspects such as operational logistics, public engagement, supervision of collection teams, and enforcement of daily routines to ensure consistency with established plans.

The controlling function refers to the development of a comprehensive monitoring and evaluation system to oversee the execution of both actuating and organizing activities, ensuring that the overarching objectives defined during the planning phase are achieved.

This research follows a five-phase process:

1) Problem formulation and objective setting: Define the research problem and objectives, including the use of literature to guide methodological direction.
2) Literature identification and data collection: Collect relevant journal articles and references using predefined inclusion and exclusion criteria.
3) Classification based on management functions: Categorize data and findings into the four POAC functions based on their relevance to MSWM implementation.
4) Analysis of key issues: Analyze major challenges and trends identified in each management function category.
5) Discussion and synthesis: Interpret findings using the management process framework to evaluate coherence, effectiveness, and potential improvement strategies.

Figure 2 illustrates the structured sequence of activities used in this study to conduct the systematic literature review, starting from problem identification through to analysis and synthesis. This methodological flow ensures that each management function is critically examined within the context of MSWM implementation, providing a comprehensive and functional lens for interpreting the findings.

2.2.2 PRISMA Framework

This study applies the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to guide the systematic literature review (SLR) process. The implementation of PRISMA in this study follows four key stages:

1) Identification

A comprehensive search for relevant literature was conducted using the ScienceDirect database. The search employed predefined keywords and Boolean operators, targeting publications from 2019 to 2024. This time frame was chosen to ensure the relevance and timeliness of findings related to current challenges and practices in municipal solid waste management (MSWM).

2) Screening

The initial pool of articles was screened by removing duplicates and assessing titles and abstracts

for relevance to the research topic.

3) Eligibility

Full-text reviews were conducted on potentially relevant articles to determine whether they met the inclusion criteria. Eligible studies were those that discussed management-related challenges, strategies, or performance in MSWM and presented empirical data or systematic analyses.

4) Included

Articles that passed all screening stages were included in the final analysis. These studies were then categorized according to the four core management functions: planning, organizing, actuating, and controlling (POAC), to evaluate managerial dimensions in MSWM implementation.

The specific inclusion and exclusion criteria are presented in Table 1. After screening and quality assessment, the study selection process followed the PRISMA flow, as illustrated in Figure 3, which documents the number of records identified, screened, excluded, and ultimately included in the review.

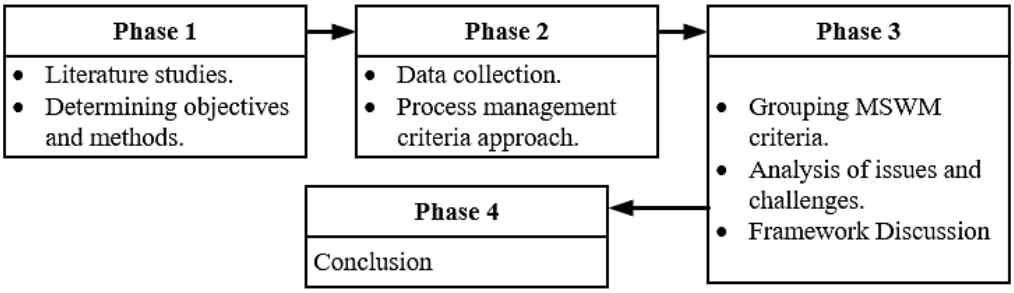

Figure 2 The research method flow

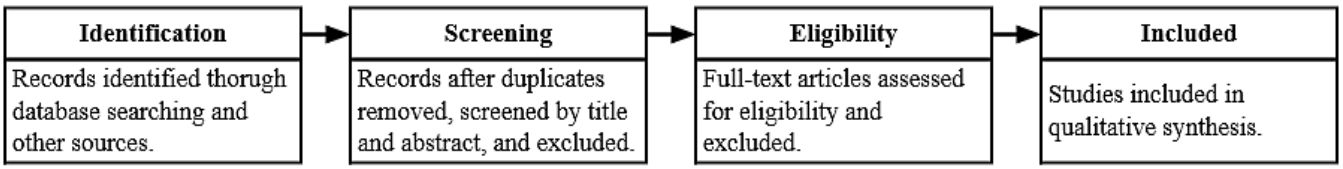

Figure 3 PRISMA flow diagram

Criterion Category	Inclusion Criteria	Exclusion Criteria
Publication Type	Peer-reviewed journal articles, academic books, conference proceedings	Non-peer-reviewed materials, opinion pieces, editorials, and short communications
Language	English	Non-English
Publication Year	Published between 2019 and 2024	Published before 2019
Topic Relevance	Discusses the implementation of MSWM with reference to technical, organizational, or managerial aspects	Focuses solely on laboratory or technical product development without management context
Research Context	Real-world case studies, empirical studies, or systematic analyses of MSWM practices	Purely conceptual frameworks without any implementation context
Framework Applicability	Provides data or discussion that can be categorized within the POAC (Planning, Organizing, Actuating, Controlling) management function framework	Irrelevant to POAC framework or lacking management/process-oriented analysis
Access to Full Text	Full-text available and accessible through institutional or open-access sources	Only abstract available or behind inaccessible paywalls

Table 1 Inclusion and Exclusion Criteria

3. Results and Discussion

This section presents the findings from the selected studies, systematically classified according to the management process framework (POAC: Planning, Organizing, Actuating, and Controlling). The synthesis aims to demonstrate how various elements of MSWM have been approached in the literature and to highlight the recurring themes, strategies, and challenges that influence the effectiveness of MSWM implementation, particularly in urban contexts with limited resources.

3.1 Literature Screening Results

The screening process followed the PRISMA guidelines. A total of 42 eligible journal articles and book chapters were selected after multiple screening phases. The inclusion criteria focused on peer-reviewed empirical studies published between 2019 and 2024 that addressed technical, managerial, and/or policy aspects of MSWM and could be analyzed within the POAC framework. Articles lacking methodological rigor, conceptual clarity, or relevance to the POAC functions

were excluded.

Table 2 presents a summary of the PRISMA flow diagram, which outlines the steps of identification, screening, eligibility assessment, and final inclusion.

3.2 Summary of Selected Studies

Table 3 provides an overview of selected studies categorized according to the POAC framework. Each entry includes the authors, year, country of study, specific research focus, POAC classification, and key findings. These studies represent a diverse set of research contexts and demonstrate how MSWM implementation is influenced by both technical and managerial dimensions.

The summary underscores the interdependence between waste system components (e.g., collection, treatment, policy, community participation) and broader management processes. By organizing the literature within the POAC structure, this review highlights how different management functions shape system outcomes and where persistent barriers continue to emerge.

3.3 Classification by POAC Management Functions

3.3.1 Planning

Planning functions in MSWM research commonly include financial feasibility, policy formulation, and stakeholder engagement. One study [20] reports that 61% of MSWM expenditure is technical, underlining the need for robust planning and prioritization.

Table 2 PRISMA literature selection flow

No	Authors (Year)	Country	Study Focus	POAC Dimension	Key Findings
1	Jiang et al. (2024)	China	Solid waste management cost analysis	Planning	61% of MSWM cost components are technical, requiring strategic planning.
2	Alam et al. (2023)	Bangladesh	Infrastructure gaps in MSWM	Planning	Shows that lack of long-term investment hinders planning effectiveness.
3	Bui et al (2023)	Vietnam	Institutional performance	Actuating	Notes that lack of HR skills and motivation affect MSWM execution.
4	Fan et al. (2023)	India	Policy implementation	Planning	Policy instruments and implementation timing were misaligned.
5	Fernando & Zutshi (2023)	Sri Lanka	Governance and participation	Actuating	Highlights importance of stakeholder collaboration and local awareness.
6	Vyas et al. (2023) [21]	India	Planning constraints in MSWM	Planning	Reveals gaps in data use and policy coherence in waste planning.
7	Anuardo et al. (2022)	Brazil	Capacity building and institutional framework	Organizing	Emphasizes formal training and role clarity across municipal waste departments.
8	Sasikumar et al. (2022)	India	Waste handling technologies	Organizing	Demonstrates that success depends on institutional coordination.
9	Agustriani et al. (2021) [22]	Indonesia	Waste collection and transport	Organizing	Points out lack of route optimization and workforce management.
10	Mir et al. (2021)	Pakistan	Public engagement	Actuating	Emphasizes public participation as key to behavioral change.
11	Zaeimi & Rassafi (2021) [23]	Iran	Integrated MSWM planning	Planning	Stresses the challenge of integration in resource-limited cities.
12	Malakahmad et al. (2020)	Malaysia	Institutional collaboration	Organizing	Shows need for cross-agency collaboration for efficient MSWM.
13	Tsai et al. (2020) [24]	Taiwan	Risk of landfill near residential zones	Planning	Highlights the need for integrated planning to minimize health risks in MSWM.
14	Tura et al. (2020)	Ethiopia	Monitoring tools for MSWM implementation	Controlling	Lack of real-time indicators and audits hinders tracking of program performance.

Another study [25] found policy–service mismatches, emphasizing the importance of aligning implementation timelines and adopting more adaptive strategies.

2) Organizing

This category addresses institutional coordination and capacity development. Some studies [11, 12] advocate for clearer municipal roles and better interdepartmental communication. Fragmented authority among actors often hampers the integration of waste services, underscoring the need for improved governance structures.

3) Actuating

Operational practices such as collection efficiency, treatment methods, and transportation logistics dominate this function. One study [13] argues

that collection is the most crucial stage due to its impact on downstream activities.

Table 3 Summary of selected studies classified by POAC

Phase	Description	Number of Records
Identification	Records identified through database searching (ScienceDirect, using Boolean keywords)	245
	Additional records identified through other sources (books, reports)	18
Screening	Records after duplicates removed	230
	Records screened based on title and abstract	230
	Records excluded (not relevant to MSWM or POAC framework)	156
Eligibility	Full-text articles assessed for eligibility	74
	Full-text articles excluded with reasons (lack of POAC link, non-technical scope)	32
Included in Review	Studies included in qualitative synthesis (SLR)	42

Another [26] notes that pairing collection systems with behavioral incentives can improve waste separation quality and recycling outcomes.

4) Controlling

Few studies thoroughly address the monitoring or feedback function. One source [29] identified a lack of real-time audits, which hinders program performance evaluation. The limited number of publications under this category highlights a research gap in developing and applying measurable MSWM performance indicators.

3.4 Research Trends by Management Function

The analysis of research distribution across management functions indicates a growing academic focus on planning and policy, particularly after the adoption of the United Nations Sustainable Development Goals (SDGs) in 2015 [27].

Figure 3 illustrates the annual distribution of studies related to the planning, organizing, and actuating functions in MSWM from 2019 to early 2024. Research on the planning function shows peak publication levels in 2020, 2022, and 2023, reflecting heightened global interest in integrating waste management with broader sustainable urban development goals. These findings are consistent with the perspectives of [28] and [29], who highlight the critical role of strong government policies in enabling integrated MSWM systems.

Among all management functions, the actuating function emerges as the most frequently studied, accounting for 78 journal articles. Within this category, research is distributed as follows:

1) Waste collection systems: 21 articles
2) Waste treatment systems: 19 articles
3) Transportation and transfer systems: 12 articles

These results support the argument by [13] that waste collection serves as the foundation of MSWM technical operations. A well-functioning collection system can significantly affect subsequent processes, including transportation efficiency, treatment performance, and recycling outcomes. Therefore, the collection phase is often considered the most critical component in the waste management chain, influencing both operational costs and environmental impact.

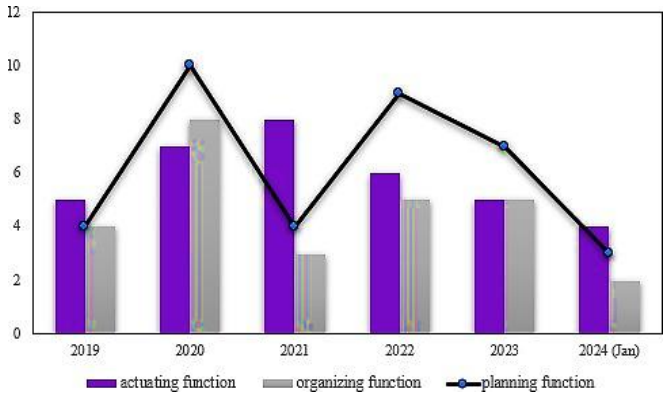

Figure 3 Trends in research composition within functional groups

3.4 Critical Analysis by Management Functions (POAC)

1) Planning: From Vision to Long-Term Commitment

The dominance of studies related to the planning function highlights the importance of strategic foresight in MSWM. However, many of these studies remain focused on policy vision, without sufficient emphasis on how long-term plans are maintained, financed, or institutionalized. As noted [28] and [29], strong policy frameworks must be paired with public engagement mechanisms and resource allocation to be effective.

Future research should move beyond normative discussions and explore the institutional pathways that turn strategic plans into enduring systems.

2) Organizing: Structural Weaknesses in Implementation Capacity

Although less frequently studied, the organizing function is a critical determinant of MSWM effectiveness. Research by [11] and [12] has revealed recurring issues such as fragmented institutional responsibilities, ambiguous mandates, and lack of coordination between agencies.

These issues often lead to inefficiencies, duplication of tasks, and unclear accountability.

Strengthening this function requires reforming institutional structures, investing in human resource development, and creating integrative units that can bridge various sectors. There is a strong need for empirical studies that document successful institutional models, particularly from low- and middle-income countries.

4) Actuating: Moving Beyond Infrastructure Toward Integrated Systems

The technical execution of MSWM—especially in collection, treatment, and transportation—remains the most frequently addressed area. However, most studies focus narrowly on physical systems, often neglecting the managerial, behavioral, or financial dimensions that affect implementation success.

As noted by [13], the collection phase sets the tone for subsequent waste management processes. However, the effectiveness of this stage is influenced not only by physical infrastructure but also by workforce organization, incentive mechanisms, and community participation. Integrating these soft dimensions into future studies related to the actuating function will enhance the understanding of the practical drivers behind functional MSWM systems.

4) Controlling: The Overlooked Pillar of Adaptive Management

The controlling function remains underrepresented, despite its importance in ensuring feedback, accountability, and system improvement. Only a handful of studies—such as [14]—explore tools for monitoring, audits, or performance tracking in MSWM.

This absence suggests that many waste management systems are operating without robust evaluative frameworks. Standardized indicators, data management platforms, and feedback loops are necessary to detect underperformance, respond to changes, and continuously improve service delivery. There is an urgent need to elevate controlling from a passive reporting mechanism to an active driver of governance.

3.5 Implications for Policy and Practice

The results of this SLR suggest that a holistic approach to MSWM is still evolving. Technical solutions are well covered, but managerial aspects—especially organizing and controlling—require deeper investigation. Integrated MSWM must address both hardware (infrastructure, logistics) and software (institutions, human resources, accountability).

For policymakers and practitioners, this review suggests several priorities:

1) Establish cross-functional task forces for interagency coordination.
2) Develop real-time monitoring dashboards to track service quality.
3) Institutionalize participatory mechanisms to ensure community involvement.

A stronger emphasis on these areas will not only improve operational efficiency but also enhance public trust and system resilience.

3.6 Limitations and Directions for Future Research

This review is limited to English-language, peer-reviewed literature from 2019 to early 2024. As such, it may exclude valuable insights from grey literature, policy briefs, or local case studies written in other languages. Furthermore, this study used a static classification (POAC), which may not fully capture the dynamic interactions between management functions. Future research should:

1) Explore hybrid frameworks that blend POAC with digital governance tools (e.g., IoT, AI-based monitoring).
2) Conduct longitudinal case studies that trace planning intentions through to outcomes.
3) Investigate successful institutional models in different regional or political contexts to identify transferable practices.

4. Conclusion

This study employed a Systematic Literature Review (SLR) using the PRISMA method to investigate the application of managerial functions—Planning, Organizing, Actuating, and Controlling (POAC)—within Municipal Solid Waste Management (MSWM) from 2019 to 2024. A total of 132 peer-reviewed articles were analyzed and classified accordingly.

The findings reveal a significant academic emphasis on the actuating and planning functions, particularly in technical implementation and policy formulation. In contrast**,** organizing and controlling functions remain underexplored, despite their crucial roles in ensuring institutional coherence and performance monitoring.

The dominance of technical and infrastructure-focused research suggests a partial view of MSWM, with insufficient attention given to governance, inter-agency coordination, long-term investment planning, and feedback mechanisms. Therefore, an integrated POAC approach is necessary to bridge policy intentions with operational realities.

To advance both research and practice in MSWM, the following recommendations are proposed:

1) Enhance Institutional Focus in Research

Future studies should explore the organizing function in greater depth, particularly regarding municipal coordination, role clarity, and budget structures.

2) Invest in Monitoring and Control Systems

Development of real-time data systems, community-based monitoring tools, and adaptive performance indicators is essential to strengthen the controlling function.

3) Promote Holistic, Cross-Functional Frameworks

Researchers and practitioners should adopt integrated POAC models that link strategic planning, institutional arrangements, technical implementation, and continuous evaluation.

4) Encourage Longitudinal and Comparative Studies

Long-term studies that track the trajectory of solid waste management programs—from planning to evaluation—will help bridge knowledge gaps in implementation dynamics.

5) Support Capacity Building and Policy Learning

Municipalities need structured capacity development programs to manage the increasing complexity of MSWM, especially in rapidly urbanizing regions.

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References

[1] Fernando, S, J. & Zutshi, A. (2023). Municipal Solid Waste Management in Developing Economies: A Way Forward. Cleaner Waste Systems, 5,100103.

[2] Bui, T., Tseng, J., Tseng, M., Wu, K., & Lim, M, K. (2023). Municipal Solid Waste Management Technological Barriers: A Hierarchical Structure Approach in Taiwan. Resources, Conservation, & Recycling,190,106842.

[3] Erkisi-Arici, S., Hagen, J., Cerdas, F., & Herrmann, C. (2021). Comparative LCA of Municipal Solid Waste Collection and Sorting Schemes Considering Regional Variability. Procedia CIRP 98, 235-240. https://creativecommons.org/licenses/by-nc-nd/4.0/

[4] Mir, I.S., Cheema, P.P.S., & Singh, S.P. (2021). Implementation analysis of solid waste management in Ludhiana city of Punjab. Environmental Challenges 2 (100023). https://doi.org/10.1016/j.envc.2021.100023

[5] Terry, G. R. (1972). Principles of Management (6th ed., pp. 30–50). Homewood, IL: Richard D. Irwin, Inc.

[6] Gunawan, D., Hariyati, T, S., Afifah, E., Afriani, T. (2021). The relationship Between the Roles and Management Function of The Head Nurse and Handover Implementation. Enfermeria Clinica, 31,S157-S160.

[7] Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. Annual Review of Psychology, 70, 747–770. https://doi.org/10.1146/annurev-psych-010418-102803

[8] Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Medical Research Methodology, 18(1), 143. https://doi.org/10.1186/s12874-018-0611-x

[9] Gough, D., Oliver, S., & Thomas, J. (2017). An introduction to systematic reviews (2nd ed., pp.1-25). London: SAGE Publications.

[10] Alam, M. M., Rahman, M. M., Rahman, M. T., & Hossain, M. S. (2023). Municipal solid waste management in developing countries: A case study on infrastructural and financial barriers in Bangladesh. Journal of Environmental Management, 330, 117257. https://doi.org/10.1016/j.jenvman.2022.117257

[11] Anuardo, R, G., Espuny, M., & Costa, A, C, F. (2022). Toward A Cleaner and More Sustainable World: A Framework to Develop and Improve Waste Management Through Organizations, Government, and Academia. Heliyon 8, e09225. https://doi.org/10.1016/j.heliyon.2022.e09225

[12] Malakahmad, A., Nasir, H. M., & Shamsuddin, A. H. (2020). Municipal solid waste management in Malaysia: Current practices, challenges, and prospects. Environmental Management and Sustainable Development, 9(2), 35–48. https://doi.org/10.5296/emsd.v9i2.16736

[13] Sasikumar, G., Sivasangari, A., & Vebkatachalam, N. (2022). Application of Analytical Hierarchy Process (AHP) for Assessment of Collection and Transportation of Solid Waste: An Empirical Study. Nature Environment and Pollution Technology an International

Quarterly Scientific Journal, 21(1), 283-288. https://doi.org/10.46488/NEPT.2022v21i01.033

[14] Tura, N., Keränen, J., & Patala, S. (2020). Circular business models in the European Union: A comparative analysis of monitoring tools, performance indicators, and implementation barriers. Journal of Cleaner Production, 258, 120978. https://doi.org/10.1016/j.jclepro.2020.120978

[15] Kitchenham, B., & Charters, S. (2007). Guidelines for performing Systematic Literature Reviews in Software Engineering. EBSE Technical Report.

[16] Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Med, 6(7), e100009

[17] Boell, S. K., & Cecez-Kecmanovic, D. (2015). On being 'systematic' in literature reviews. Formulating Research Methods for Information Systems, 48(5), 1614–1631.

[18] Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. Health Information & Libraries Journal, 26(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

[19] Nashrullah, M., Rindaningsih, I., & Hidayatulloh. (2023). Improving Educator Recrutiment Management in Primary and Secondary Education Institutions. Middle European Scientific Bulletin. Volume 32. ISSN 2694-9970. ISSN 2694-9970. https://cejsr.academicjournal.io

[20] Jiang, J., Liu, X., & Zhang, Y. (2024). Optimizing municipal solid waste budgets: Insights from expenditure patterns in developing cities. Waste Management, **169**, 54–63. https://doi.org/10.1016/j.wasman.2024.01.012

[21] Vyas, S., Dhakar, K., Varjani, S., Singhania, R, R., Bhargava, P, C., Sindhu, R., Binod, P., Wong, W. C., Bui, X. (2023). Solid Waste Management Techniques Powered by In-Silico Approach with A Special Focus on Municipal Solid Waste Management: Research Trends and Challenges. Science of the Total Environment, 891, 164344. http://dx.doi.org/10.1016/j.scitotenv.2023.164344

[22] Agustriani, E., Sulistiyono, H., & Akmaluddin. (2021). Evaluasi Kinerja Pengelolaan Persampahan Kota Gerung. BINA PATRIA 6 (1). 6121-6128. http://ejurnal.binawakya.or.id/index.php/MBI

[23] Zaeimi, M. B., & Rassafi, A.A. (2021). Designing an integrated municipal solid waste management system using a fuzzy chance-constrained programming model considering economic and environmental aspects under uncertainty. Waste Management, 125, 268-279. https://doi.org/10.1016/j.wasman.2021.02.047

[24] Tsai, F.M., Bui, T., Tseng, M., & Wu, K. (2020). A causal municipal solid waste management model for sustainable cities in Vietnam under uncertainty: A comparison. Resources, Conservation & Recycling, 154, 104599. https://doi.org/10.1016/j.resconrec.2019.104599

[25] Fan, X., Chu, Z., Chu, X., Wang, S., Huang, W., & Chen, J. (2023). Quantitative Evaluation of The Consistency Level of Municipal Solid Waste Policies in China. Environmental Impact Assessment Review, 99, 107035. https://doi.org/10.1016/j.eiar.2023.107035

[26] Bertanza, G., Ziliani, E., & Menoni, L. (2018). Techno-economic performance indicators of municipal solid waste collection strategies. Waste Management, 126, 821-831. https://doi.org/10.1016/j.wasman.2021.04.017

[27] United Nations Environment Programme (UNEP). (2016). Global waste management outlook. United Nations Environment Programme. https://www.unep.org/resources/report/global-waste-management-outlook

[28] Ye, Q., Umer, Q., Zhou, R., Asmi, A., & Asmi, F. (2023). How Publications and Patents are Contributing to The Development of Municipal Solid Waste Management: Viewing the UN Sustainable

Development Goals as Ground Zero. Journal of Environmental Management, 325, 116496. https://doi.org/10.1016/j.jenvman.2022.116496

[29] Meena, M, D., Dotaniya, M, I., Meena, B, L., Rai, P. K., Antil, R, S., Meena, H, S., Meena, L, K., Dotaniya, C. K., Meena, V, S., Ghosh, A., Meena, K. N., Singh, A, K., Meena, D, K., Moharana, P, C., Meena, S, K., Srinivasarao, Ch., Meena, A, L., Chatterjee, S., Meena, D, K., Prajapat, M., & Meena, R, B. (2023). Municipal Solid Waste: Opportunities, Challenges and Management Policies in India. Waste Management Bulletin, 1, 4-18. https://doi.org/10.1016/j.wmb.2023.04.001