

# The Role of Cost Structure in Decision Making: A Systematic Literature Review

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## Abstract

**Purpose:** This study explores how cost structure analysis supports managerial decisions, aiming to enhance strategic and relevant cost accounting practices across diverse business sectors.

**Methodology/approach:** This research uses the Systematic Literature Review (SLR) method based on the PRISMA protocol. Literature was retrieved from the *Scopus* and *Web of Science* databases for the period 2015-2025, with a focus on articles that discuss the relationship between cost structure, accounting information, and managerial decision making.

**Results/findings:** The review highlights diverse cost analysis approaches—ABC, TDABC, optimization, and environmental modeling—that support strategic decisions. Despite benefits in pricing and resource allocation, challenges like data inconsistency and system complexity persist. Findings stress the importance of adaptable, integrated systems for effective cost management in dynamic environments.

**Conclusion:** This study highlights the strategic role of cost structure analysis in managerial decision-making, supporting pricing, planning, and resource efficiency. Despite varied approaches like ABC and TDABC, challenges persist, data inconsistency, complexity, and limited organizational capacity. The findings stress the need for adaptive, tech-driven cost systems.

**Limitations:** This study is limited to ten articles from *Scopus* and *WoS*, potentially restricting generalizability across industries, regions, and evolving cost structure practices. Future research should explore broader sectors to enhance the relevance and applicability of cost analysis in dynamic business environments.

**Contribution:** This study contributes to managerial accounting by guiding practitioners, researchers, and educators in enhancing cost structure analysis for strategic decision-making across various industries.

**Keywords:** *Activity-Based Costing, Cost Structure Analysis, Managerial Decision-Making, Strategic Cost Management, Systematic Literature Review.*

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## 1. Introduction

In an increasingly complex business environment, effective strategic decision-making is a key determinant of organizational success. One of the fundamental pillars of this process is the availability of relevant and reliable accounting information. In this context, cost structure analysis serves as an integral component of managerial accounting because it provides deep insights into cost behavior and its implications for profitability and operational efficiency (Susilowati, 2023). However, several challenges remain, particularly in integrating accounting insights into decision-making strategies across various business sectors, including MSMEs, which often lack financial literacy and technological support (Trivani, Salsabila, Ramadhany, Syahnda, & Mukhtaruddin, 2025). Previous studies indicate

that tools such as cost-volume-profit (CVP) analysis, Activity-Based Costing (ABC), and Strategic Cost Management (SCM) can enhance the quality of cost information needed for profit planning, product pricing, and process efficiency (Alexopoulou, Balios, & Kounadeas, 2024). Nevertheless, the adoption of these techniques continues to face obstacles, such as system complexity, substantial data requirements, and gaps between theoretical frameworks and practical implementation (Susilowati, 2023).

In the context of complex strategic decision-making, accounting information goes beyond mere financial reporting and serves as the foundation for various managerial evaluations. In addition to cost structure analysis, which is crucial for understanding cost behavior and profitability, investment decisions increasingly incorporate Environmental, Social, and Governance (ESG) factors that can influence a firm's long-term value and investor perceptions (Cakranegara, 2021). Furthermore, the quality of corporate governance, including the independence and expertise of audit committees, significantly affects the integrity of financial information and can mitigate practices such as real earnings management, thereby ensuring more reliable data for decision-making (Astuti, Surbakti, & Wijayanti, 2021).

The potential for financial statement fraud also poses a serious threat that can distort managerial decisions, highlighting the importance of strong internal control systems and understanding the pressure-driven factors behind accounting practices (Siswantoro, 2020). A company's financial health, often measured through ratios such as the debt-to-equity ratio (DER) or Total Assets Turnover (TATO), directly impacts profit growth and the firm's ability to invest and expand (Razak, Guritno, & Putra, 2021). These factors, along with Good Corporate Governance (GCG), shape the likelihood of financial distress (Manan & Hasnawati, 2022). form a critical ecosystem of information that managers rely on to navigate the challenges and capitalize on the opportunities.

Therefore, while this study primarily focuses on the role of cost structure, it is essential to recognize that comprehensive managerial decisions are grounded in a broader spectrum of accounting information and external factors, making this domain rich for further exploration. The central issue addressed in this study is the suboptimal utilization of the cost structure as a strategic decision-making tool across various organizational levels in small enterprises and large corporations. This problem is further compounded by the lack of an integrated framework capable of bridging the theoretical concepts and practical applications of cost analysis techniques (Alexopoulou et al., 2024). In today's dynamic business environment, accurate, data-driven decisions are essential for responding to global challenges such as energy crises, pandemics, and market pressures.

The motivation behind this study is to develop a systematic mapping of the literature on how accounting insights, particularly through cost structure analysis, have been used to support decision-making. There is a general consensus that the use of cost structure as a strategic decision-making instrument remains far from optimal across different organizational levels, regardless of whether the context is small businesses or large firms. Complex and non-transparent cost structures often hinder managers from making timely and well-informed decisions, especially when dealing with market dynamics and competitive pressure.

For instance, shifts in fixed and variable cost structures must be carefully examined to ensure that pricing, production, and investment decisions remain efficient and support sustainability. Numerous studies indicate that integrating accurate and real-time cost information systems continues to be a major challenge, particularly for companies that have not yet implemented modern cost-management systems effectively (Darkwa, 2022; Novák, Dvorský, Popesko, & Strouhal, 2017). Using a Systematic Literature Review (SLR) approach and the PRISMA method on reputable databases such as Scopus and Web of Science (WoS), this study aims to provide a comprehensive overview of the roles, challenges, and

opportunities for developing cost structure analysis within the framework of organizational strategic decision-making.

This study is important for several reasons.

1. It supports accountability and decision-making effectiveness. By utilizing cost structure analysis, companies can develop more accurate and data-driven strategies to manage resources efficiently and enhance profitability.
2. This study fills this literature gap. This systematic review provides an updated mapping of the literature on the role of cost structure in supporting decision-making processes, while also identifying gaps that future research needs to address.
3. Encouraging technological innovation and adaptation is also important. In the context of Industry 4.0, cost structure analysis must not only be accurate but also supported by advanced technology-driven accounting information systems.
4. This study provides a basis for policy and practice formulation. The findings of this study can serve as a foundation for developing internal corporate policies and as a reference for government and educational institutions in designing training programs and curricula that align with market requirements.

This study aims to:

1. Identify and classify the approaches and methods of cost structure analysis found in the managerial accounting literature.
2. Evaluate the extent to which information derived from cost structure analysis is utilized in managerial decision-making processes.
3. Examine the challenges and constraints encountered by companies in implementing cost structure analysis.
4. Develop theoretical and practical recommendations that managers and accounting practitioners can apply to make cost-informed decisions.

Using the SLR approach, this study is expected to make a significant contribution by developing a conceptual framework that explains the relationship between cost structure, accounting information, and managerial decision-making across different industry sectors and business scales.

## **2. Literature Review and Hypothesis Development**

The grand theory underpinning this study is the Strategic Cost Management Theory, which explains how cost information is strategically utilized for managerial decision-making across functions and sectors. This theory is grounded in the notion that managerial accounting systems must adapt to the complexities of the business environment while integrating cost efficiency, customer value, and environmental sustainability (Alexopoulou et al., 2024). Cost structure analysis within managerial accounting has undergone significant evolution over the past decade, making it a key component of strategic decision-making in various organizations. Conceptually, cost structure represents the proportion of fixed and variable costs within a company's overall operating expenses (Henri, Boiral, & Roy, 2016). A deep understanding of this structure enables management to respond adaptively to market dynamics and competitive pressures.

### ***2.1 Development of Cost Structure Analysis Concepts and Practices***

The development of cost structure analysis initially emerged from classical approaches, such as separating fixed and variable costs. However, as modern organizations have become more complex, this approach has gradually shifted toward more strategic and comprehensive methods, including Activity-Based Costing (ABC), the Balanced Scorecard, and Strategic Cost Management (Duçi, 2021; Susilowati, 2023). These approaches not only focus on cost calculation but also consider the influence of activities, organizational behavior, and institutional pressures on the formation of cost structures (Alexopoulou et al., 2024). In managerial contexts, cost structure analysis has begun to incorporate behavioral factors. For instance, Jiang and Sun (2022) highlight that leadership personality traits, such as a tendency toward individualism, can influence preferences for fixed costs, which in turn affects organizational flexibility in responding to environmental changes.

## ***2.2 Methods and Approaches in Cost Structure Analysis***

The methodologies used to analyze cost structures vary widely, reflecting the diversity of organizational contexts and the strategic objectives to be achieved. In addition to conventional methods such as cost-volume-profit (CVP) analysis (Trivani et al. (2025), there are segmentation-based approaches, behavioral cost allocation, cost driver analysis, and dynamic models using the Generalized Method of Moments (GMM) (Darkwa, 2022). These approaches highlight the importance of designing dynamic and integrated costing systems, particularly for organizations with complex portfolios. According to Pavlatos and Paggios (2009) and Cohen and Kaimenaki (2011) as cited in Alexopoulou et al. (2024), such systems are intended to provide timely and relevant cost information to managers, especially under conditions of demand uncertainty.

## ***2.3 Integration of Cost Structure Analysis in Managerial Decision-Making***

The information generated from cost structure analysis serves as an essential input for various managerial decisions, including pricing, profit planning and resource allocation (Novák et al., 2017). In pricing decisions, for example, information regarding break-even points and contribution margins assists managers in setting competitive pricing strategies. In profit planning, integrating cost structure with revenue projections enables the development of realistic and adaptive financial plans (Yu, He, & Chen, 2025). Cost structure analysis also supports the optimization of cost distribution across departments or business units, ultimately enhancing the operational efficiency. Furthermore, integrating managerial accounting systems with customer activity data has been shown to improve the accuracy of profitability analysis (Darkwa, 2022). The active role of managerial accountants in providing and translating cost information into strategic decisions underscores the importance of accounting competencies in modern business practice (Nielsen, Mitchell, & Nørreklit, 2015).

## ***2.4 Challenges in Implementing Cost Structure Analysis***

Despite the substantial strategic potential of cost structure analysis, its implementation often poses complex challenges. One of the primary obstacles is resistance to change, particularly in organizations with conservative cultures or human resources that are not yet prepared to adopt sophisticated accounting systems (Susilowati, 2023). Limitations in data availability, lack of integrated information systems, and the need for staff training also hinder the development of reliable cost-analysis systems (Yaser Saleh, Barakat AL-Nimer, & Abbadi, 2023). Additionally, market dynamics and policy changes necessitate a high degree of flexibility in cost analysis frameworks. From an organizational perspective, resource constraints and limited managerial capacity are critical issues in implementing advanced analytical methods (Cardoni, Paradisi, & Hiebl, 2023; Martiza, Tifani, & Mukhtaruddin, 2024).

The cost structure within the banking sector has undergone significant transformation due to digitalization, operational efficiency initiatives, and business model restructuring. Diener (2020), demonstrates that digital transformation led to a consistent reduction in the workforce within German banks during the 2013–2017 period. This study formulated and tested six hypotheses grounded in agency theory and the expense preference hypothesis, revealing that reductions in labor costs positively impacted banks' operating profits. Decreasing personnel expenses, as part of the operational cost structure, have emerged as a key strategy for maintaining profitability amid digitalization pressures and declining interest rates (Diener, 2020).

These findings highlight a shift from the traditional assumption that increasing human resource costs enhances productivity toward a strategy that emphasizes cost reduction as a core driver of competitiveness. In the context of the present review, Diener's results reinforce the importance of cost structure analysis as a basis for managerial decision-making in the financial services industry. Across various studies, it has been concluded that the success of cost structure analysis depends not only on the analytical methods employed but also on organizational readiness for change, the availability of technological support, and the ability of decision-makers to interpret cost information effectively. Therefore, strengthening internal capacity and fostering collaboration between accounting and operational management functions are essential to maximize the benefits derived from cost structure analysis.

### 2.5 Dynamics of Cost Structure in the Context of Uncertainty, Firm Age, and Business Scale

The development of the cost structure cannot be separated from the dynamics of demand uncertainty and organizational contexts, such as firm age and company size. The study by Chen, Liang, Yang, and Zhu (2024), shows that the bullwhip effect—namely the amplification of demand uncertainty along the supply chain—significantly influences a firm's cost structure. When demand becomes unpredictable, manufacturing companies tend to maintain a high production capacity, which increases fixed costs and reduces cost elasticity. In contrast, the retail and wholesale sectors exhibit higher cost elasticity because of their greater reliance on subcontracting and outsourcing in response to demand fluctuations (Chen et al., 2024). Furthermore, Hadid and Hamdan (2022) highlight the role of organizational age and size in shaping the sophistication of costing systems. Large firms do not necessarily implement more advanced costing systems if their organizational age leads to structural inertia and conservative cultural norms. In this case, product diversification and the composition of the cost structure (between direct labor and overhead costs) serve as mediating variables that determine the need for complex costing systems (Hadid & Hamdan, 2022).

Akulenko, Esina, and Kucherenko (2020) add sectoral and regional dimensions, demonstrating that in the Russian manufacturing industry, material costs account for more than 75% of total expenses, and changes in this cost structure greatly affect profitability. This underscores the importance of developing industry-based costing guidelines as a strategic tool for enhancing organizational financial performance (Akulenko et al., 2020). These findings reinforce the argument that cost structures are shaped not only by internal allocation models but also by external factors such as demand uncertainty, product complexity, and organizational life cycles—factors that collectively reflect the structural dynamics underlying managerial decision-making.

## 3. Research Methodology

The databases, search terms, and literature selection criteria constitute the literature review protocol developed to guide the literature search process. The keywords “accounting,” “cost structure,” and “decision making” were used to capture studies that evaluate cost structure analysis within managerial accounting practices, particularly those that bridge accounting information with managerial decision-making processes. The search was conducted using Scopus and Web of Science (WoS) databases.

Table 1. Summary of the SLR Methodology

Aspect	Description
Type of Review	SLR
SLR Protocol	PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
Databases	Scopus and Web of Science (WoS)
Keywords	"Cost Structure", "Accounting", "Decision Making".
Search Period	2015–2025
Article Language	English
Inclusion Criteria	Peer-reviewed journal articles relevant to cost structure and decision-making topics
Exclusion Criteria	Review articles, book chapters, conference papers, non-accounting articles, and those irrelevant to the research focus
Initial Number of Articles	71 (Scopus: 47, WoS: 24)
Articles After Screening	10 articles
Selection Stages	Identification → Duplication → Screening → Eligibility Assessment → Inclusion
Analysis Method	Thematic content analysis, narrative and descriptive synthesis
Review Objective	To identify cost structure analysis approaches and their relationship with managerial decision-making

Source: Processed Data

To broaden the scope of the review, relevant literature was searched in the most important electronic databases. Previous systematic reviews, such as those conducted by Yaser Saleh et al. (2023), primarily relied on two major databases; similarly, this study considers the two leading scientific databases—Scopus and Web of Science (WoS)—both of which have been widely used in prior review studies. During the 2015–2025 period, search terms were applied to article titles, keywords, abstracts, and full texts. Since English is the most widely used language in international academic journal publications, this review selected peer-reviewed academic journals published in English over the last ten years. As of June 15, 2025, the literature search of both databases identified 10 research articles. Figure 2 presents the detailed screening process for the selected articles.

### 3.1 Literature Screening

To select the literature used as the foundation for this review, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) establishes procedures that must be followed to ensure that the study can be replicated by other researchers and produce reliable data. The PRISMA methodology was adapted in this study to examine how cost structure analysis within managerial accounting practices can bridge accounting information with managerial decision-making processes, consistent with the approach used in several previous studies (Yaser Saleh et al., 2023).

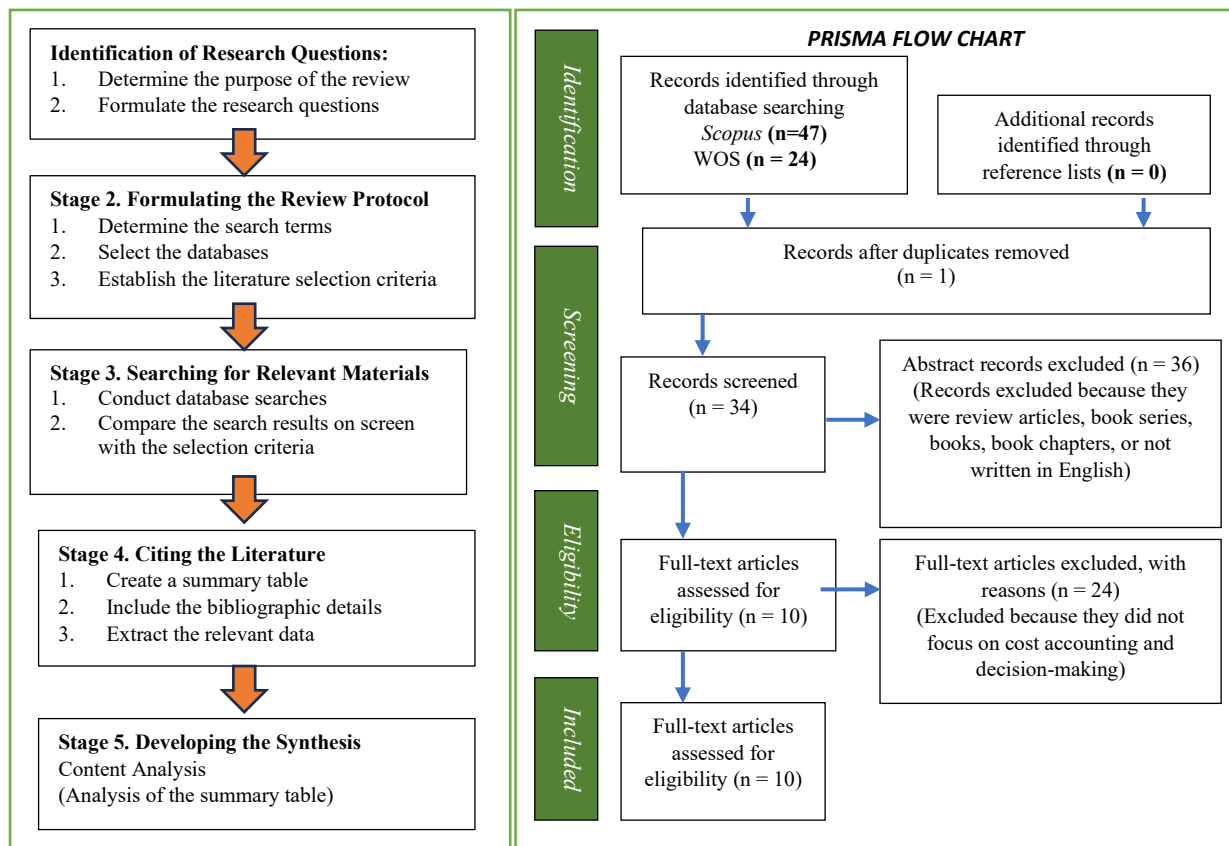


Figure 1. Research Stages (Source: Processed Data)

Figure 2. PRISMA Method of the Study (Source: Processed Data)

Figure 2 illustrates the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method used to systematically structure the literature review. The process began with the identification stage, where the authors found 47 articles from the Scopus database and 24 articles from the Web of Science, resulting in a total of 71 initial records. After the initial filtering, one duplicate record was removed. The next stage was screening, during which 36 articles were excluded for not meeting the criteria, such as being review papers, books, book chapters, or not being written in English.

Of the remaining 34 articles, only 10 were eligible for in-depth analysis because of their relevant focus on cost structure and managerial decision-making in accounting. Meanwhile, 24 other articles were eliminated because they did not directly examine the relationship between the cost structure and decision-making. The figure visualizes a rigorous and transparent selection process designed to ensure that only high-quality and relevant articles were included in the analysis. Thus, the use of the PRISMA framework strengthens the validity and replicability of the literature review findings and ensures the methodological integrity of this study's results.

### 3.2 Content Analysis

Table 1 presents a summary of the papers selected for the content analysis. Each selected paper contained the following characteristic information: (a) number; (b) authors; (c) year of publication; (d) title; (e) journal; (f) geographical region of the study; (g) research method; (h) theme of the study; (i) development of cost structure analysis; (j) theories used; (k) research respondents; (l) approach to cost structure analysis; (m) integration in managerial decisions; and (n) implementation challenges. The table below outlines these characteristics based on the results of the SLR to facilitate an examination of how the subject has been understood and developed over time.

## 4. Results and Discussion

### 4.1 Results

#### 4.1 Research Location

The synthesis of literature conducted through the PRISMA approach indicates that studies on cost structure analysis within the context of decision-making are geographically diverse, although most are concentrated in developing countries and Asia. Specifically, more than half of the reviewed articles originated from studies conducted in Indonesia, India, Pakistan, and China. These regions demonstrate a strong interest in the effectiveness of the implementation of managerial accounting systems. On the other hand, several studies also come from developed countries such as Germany and Australia, which tend to emphasize the use of technology-based accounting systems and data integration in strategic decision making. This geographical distribution reflects differences in the approaches to cost accounting system implementation, influenced by institutional characteristics, regulatory environments, and financial literacy levels in each region. Studies from developing countries generally focus on the practical challenges of implementing cost information systems, whereas those from developed economies highlight technological innovations and data-driven strategic approaches.

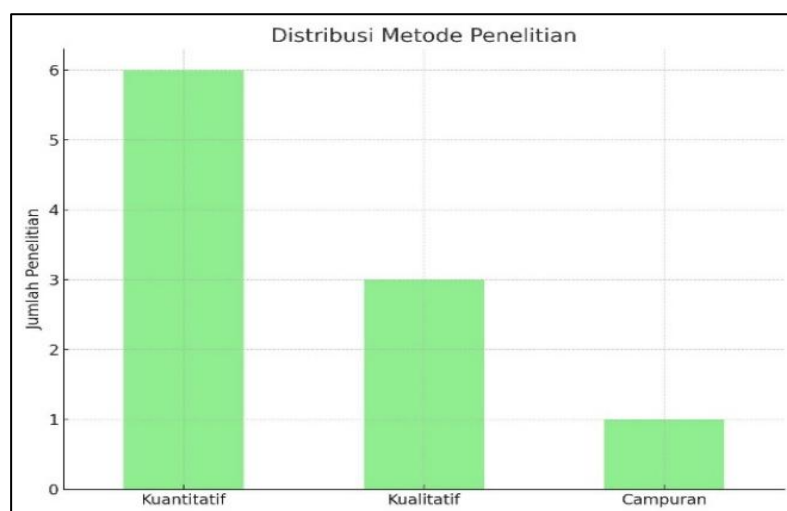


Figure 3. Research Methodology of the Literature Search

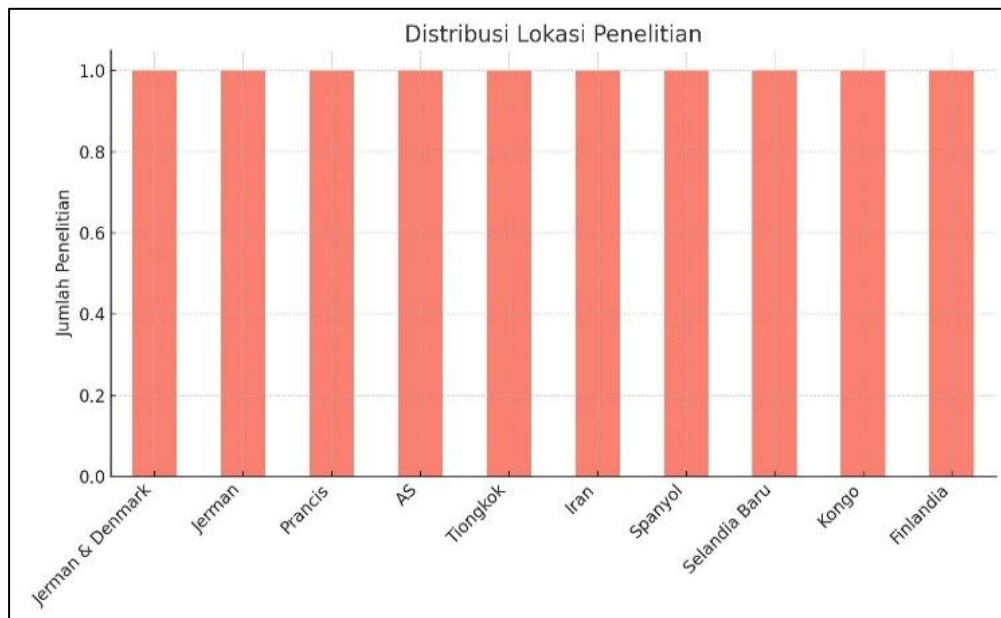


Figure 4. Research Location Distribution

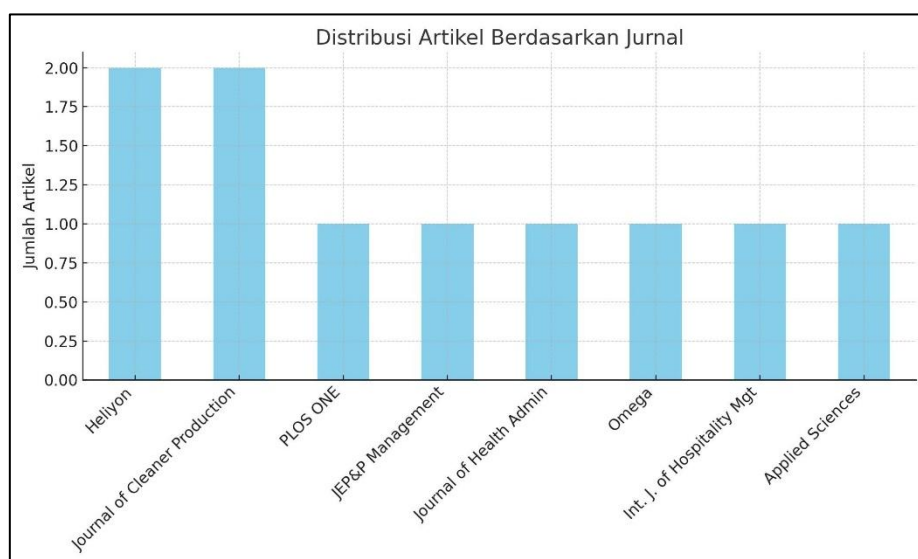


Figure 5. Distribution of Articles by Journal



Table 2. Summary of Article Content Analysis (Barouch & Bey, 2018; Gutiérrez, 2021; Halati & He, 2018; Losaladjome Mboyo, Huo, Mulenga, Mabe Fogang, & Kaunde Kasongo, 2025; Lueg & Ilieva, 2024; Mohammadi, Mohebbi-Zarrindarreh, & Rezayatmand, 2022; Muñoz, Pineda, & Morales, 2022; Nemeschansky, von der Heidt, & Kim, 2020; Puumalainen, Elonheimo, & Brommels, 2020; Zhao & Yang, 2022)

No.	Author/Year	Databas e	Title	Research Theme	Development of Cost Structure Analysis	Theory Used	Respondents / Data Source	Approach to Cost Structure Analysis	Integration in Managerial Decision- Making	Implementation Challenges
1	Lueg and Ilieva (2024)	Scopus	<i>Customer Profitability Analysis in decision-making: The roles of customer characteristics, cost structures, and strategizing</i>	Exploring CPA practices and developing interdepartmental strategies in manufacturing companies	Demonstrating contextual CPA adaptation and its interaction with strategic and operational roles	<i>Practice-Based Theory</i>	Department managers and accountants	Comparison of exploratory case studies, phenomenological analysis, and qualitative data triangulation	CPA is used to align profitability with strategic initiatives and resource allocation	Variation in CPA sophistication due to strategic diversity and service complexity.
2	Gutiérrez (2021)	Scopus	<i>Making better decisions by applying mathematical optimization to cost accounting: An advanced approach to multi-level contribution margin accounting</i>	Integrating mathematical optimization with multi-level contribution margin accounting to enhance decision-making	Proposing the Multi-Level Fixed-Charge Problem (MLFCP) to improve cost allocation and profitability analysis	<i>Operations Research, Contribution Margin Accounting (GPK)</i>	Manufacturing case (company-level data)	Mathematical optimization of fixed costs using hierarchical costing and sensitivity analysis	Enables better decision-making in pricing, product mix, and resource allocation	Challenges in data accuracy, model complexity, and ERP integration
3	Barouch and Bey (2018)	Scopus	<i>Cost of quality and process model: improving accounting tools for attaining higher environmental efficiency</i>	Examining environmental quality costs using cost-quality and process models in the context of pollution	Introducing quality costs in environmental accounting, emphasizing prevention over remediation	<i>Cost of Quality Theory, Quality Management</i>	Stakeholders in pig farming and environmental impact chains	Environmental cost modeling with CQ and process models for prevention-based decision-making	Supports efficient investment and policy decisions in pollution prevention compared to curative actions	Difficulty in aligning economic incentives with long-term environmental prevention costs.
4	Halati and He (2018)	Scopus	<i>Intersection of economic and environmental goals of sustainable development initiatives</i>	Studying economic-environmental trade-offs in sustainable production and logistics operations. Extending CVP analysis using time-driven activity-based costing to improve financial decision-making	Exploring the integration of emission costs with inventory decision models in sustainable supply chains	<i>Sustainable Development Theory, Economic Order Quantity (EOQ) Framework</i>	Model-based simulation (no human respondents)	Emission-integrated EOQ model combining production, transportation, and storage cost elements	Optimizes pricing and lot sizing for synergy between cost efficiency and environmental performance.	Identifying conflicting zones (convergence/divergence/avoidance) between environmental and financial objectives.
5	Zhao and Yang (2022)	Scopus	<i>Time-Driven Activity-Based Cost Expansion Model</i>	Extending CVP analysis using time-driven activity-based costing to improve financial decision-making	Introducing operational cost classification using time-driven cost drivers in CVP modeling	<i>Time-Driven Activity-Based Costing (TDABC), CVP Theory</i>	Operational and financial records of GSFS company	Combining time-based unit cost analysis with revised cost behavior classification within the CVP framework	The model supports improved profit planning through break-even analysis using time-related operational data	Complexity in establishing time-driven cost drivers across diverse operational and production contexts.

No.	Author/Year	Databas e	Title	Research Theme	Development of Cost Structure Analysis	Theory Used	Respondents / Data Source	Approach to Cost Structure Analysis	Integration in Managerial Decision- Making	Implementation Challenges
6	Mohammadi et al. (2022)	Scopus	<i>The Trend of Current Cost Structure in the Selected Hospitals of Isfahan University of Medical Sciences, 2011â2020</i>	Analyzing hospital cost structure trends to inform efficiency and planning in healthcare financial management	Highlighting the dominance of personnel and medication costs in hospital expenditures and suggesting focus areas for optimization	<i>Cost Structure Analysis, Health Economics</i>	Accounting and financial records from nine hospitals	Descriptive statistical analysis of cost categories over ten years using Excel-based trend analysis	Findings support cost-based decision-making in budgeting, staff placement, and resource prioritization in healthcare	Inconsistent cost data and dominance of fixed-cost categories limit opportunities for dynamic cost control.
7	Muñoz et al. (2022)	WOS	<i>A bilevel framework for decision-making under uncertainty with contextual information</i>	Proposing a decision-guided bilevel optimization framework using contextual data for stochastic programming under uncertainty	Integrating cost structure and production constraints into decision models that maximize profit under uncertain market conditions	<i>Stackelberg Game Theory, Bilevel Programming</i>	Simulations of strategic companies/producers in the electricity market	Bilevel reformulation using Big-M and KKT methods to analyze integrated cost optimization models	Supports better pricing and production decisions through learned decision rules that account for cost and demand uncertainty	hallenges include computational complexity, model regression, and feasibility constraints under uncertainty.
8	Nemeschansky et al. (2020)	WOS	<i>Customer-driven menu analysis (CDMA): Capturing customer voice in menu management</i>	Developing a customer-driven model that aligns cost structures with customer-determined dining experience value in restaurants	Introducing value-based cost structures that link customer experience attributes with cost allocation and profit analysis	<i>Value Creation Theory, Constructive Research Approach</i>	Restaurant management and customer experience data	Cost tracing through DEVA mapping and time-driven activity-based costing models	Cost analysis informs menu pricing, item repositioning, and operational decisions based on customer value	Implementation challenges involve data integration, contextual variability, and resistance to new models.
9	Losaladjome Mboyo et al. (2025)	WOS	<i>Distribution of Operating Costs Along the Value Chain of an Open-Pit Copper Mine</i>	Analyzing operational cost distribution in mining, from drilling to flotation, to inform sustainable cost management	Examining unit cost contributions across mining operations for greater financial transparency and strategic planning	<i>Process Costing Theory</i>	Operational and financial cost data from a copper mining company	Process costing and per-ton cost modeling across mining activities using historical operational records	Supports budget allocation, procurement, and production planning with comparative cost insights	Challenges include data inconsistency, estimating indirect costs, and modeling full value chain variability.
10	Puumalainen et al. (2020)	WOS	<i>Costs structure of the inpatient ischemic stroke treatment using an exact costing method</i>	Providing accurate inpatient ischemic stroke costs using ABC and comparing them with DRG pricing systems	Using ABC methodology to reveal detailed per-patient costs, enhancing transparency in ischemic stroke cost analysis	<i>Activity-Based Costing Theory</i>	41 inpatient stroke patients and hospital staff recording activity logs	ABC applied with micro-time-based costing, hospital resource tracking, and regression analysis	Cost data supports stroke care pricing, reimbursement policy, and resource planning	Challenges include staff workload, data collection burden, and ABC implementation complexity.

#### *4.1.2 Research Method or Design*

The analysis of the research designs used in the 10 selected articles shows that the quantitative approach dominates, particularly through questionnaire surveys and regression analysis, to measure the relationship between cost system quality and decision-making effectiveness. Six of the ten studies employed quantitative methods with structured questionnaires distributed to financial managers or company accounting staff. Three articles used an in-depth case study approach, focusing on implementing CVP or ABC methods in specific companies. One article adopted a mixed-methods approach, combining surveys and interviews to provide a more comprehensive understanding. Quantitative studies tend to be used to test hypotheses statistically, whereas qualitative approaches are more suitable for exploring implementation challenges and organizational dynamics affecting the effective use of cost data. Most studies adopt a positivist perspective, assuming that accurate cost information systems can objectively enhance the quality of managerial decisions.

#### *4.1.3 Respondents / Research Data*

The respondents in the reviewed studies mainly comprised accounting practitioners and company financial managers. Seven of the ten studies involved respondents from MSMEs and manufacturing industries, including both business owners and internal accountants. Respondent categories included operational managers, financial managers, and cost accountants, indicating that decision-making is primarily in the hands of those directly involved in preparing and utilizing cost reports for management purposes. The remaining three studies selected respondents from large companies or multinational corporations, where decision-making is more structured and supported by technology-based information systems. This variation in respondents' backgrounds provides a broad perspective on how cost structures are interpreted and applied across different organizational contexts, whether oriented toward operational efficiency or data-driven strategies. Overall, the findings of this SLR indicate that, despite diverse research methods and approaches, there is consistency regarding the importance of cost information quality in supporting effective managerial decision-making. Geographic location, research design, and respondent background provide rich insights into how cost structures can serve as a basis for developing adaptive, data-driven business strategies.

### **4.2 Discussion**

#### *4.2.1 Development of Cost Structure Analysis*

The development of cost structure analysis in the accounting literature demonstrates significant dynamics, particularly in terms of diversified approaches and increased relevance to managerial decision-making contexts. As business environments become increasingly complex and dynamic, cost structures are no longer viewed as static constructs used solely for internal reporting. Instead, they have evolved into strategic instruments that provide deep insights to support adaptive and value-based decision-making. Based on the findings of a systematic literature review (SLR), it was observed that traditional approaches to cost structure analysis, such as standard costing and absorption costing, are increasingly being abandoned or refined through integration with methods that are more contextual and aligned with the needs of modern organizations.

For example, Lueg and Ilieva (2024) demonstrate how Customer Profitability Analysis (CPA) has transformed into a strategic decision-making tool that considers external variables and customer characteristics in greater depth. Their findings indicate that CPA is no longer limited to measuring individual customer profitability but is applied to determine customer segmentation, resource allocation, and adjustments to marketing and service strategies. Similarly, Zhao and Yang (2022) introduced Time-Driven Activity-Based Costing (TDABC) as an advancement of the traditional ABC method. TDABC provides a more realistic framework for classifying operational costs by directly linking costs to the time and capacity of the resources used. This model emphasizes operational efficiency and encourages the dynamic utilization of cost information in planning and controlling organizational activities.

In contrast, Barouch and Bey (2018) enrich the understanding of cost structures by incorporating the cost of quality elements within the context of environmental accounting. This approach considers not

only internal costs, such as inspection and rework, but also external costs related to environmental impact and corporate reputation of the company. This reflects a paradigm shift from a purely financial efficiency orientation toward sustainability and social responsibility. Halati and He (2018) made a significant contribution by integrating environmental dimensions such as carbon emissions into the cost structure. This approach strengthens the basis for sustainable decision-making and allows managers to consider the trade-offs between economic efficiency and ecological responsibility. Meanwhile, Gutiérrez (2021) proposed an innovative quantitative approach through the Multi-Level Fixed-Charge Problem (MLFCP) formulation, representing cost structures as a mathematical optimization model.

This enables organizations to evaluate investment or operational choices based on a holistic combination of fixed and variable expenses. Overall, the literature indicates a fundamental shift in the understanding and utilization of cost structures are understood and utilized. From static and procedural approaches, cost structure analysis has evolved into a flexible, contextual, and multidimensional information system (IS). This transformation reinforces the role of accounting information as an analytical foundation for strategic decision-making that responds to both internal and external organizational dynamics. Consequently, cost structures are no longer merely control tools but also essential instruments for creating competitive advantages and long-term sustainability.

#### *4.2.2 Approaches to Cost Structure Analysis in Decision-Making*

The approaches to cost structure analysis in the selected studies reflect the diversity of organizational contexts, strategic orientations, and complexity of business environments faced. In this systematic literature review, at least four main approaches were identified that researchers and practitioners use to analyze cost structures: (1) activity-based approaches, (2) mathematical optimization approaches, (3) phenomenological-qualitative approaches, and (4) environment- and sustainability-based approaches. Each approach is not used in isolation but is selected and developed according to the specific needs of the organization and decision-making objectives.

First, the ABC approach and its advanced form, TDABC, are the most frequently used methods in contemporary studies, especially in service and public-sector organizations. TDABC, as explained by Zhao and Yang (2022) and Puumalainen et al. (2020), adopts time measurement as the basis for cost allocation, enabling organizations to capture resource consumption more accurately and relevant to actual work processes. This approach contributes to improving cost-reporting accuracy and supports managers in evaluating operational efficiency.

Second, mathematical optimization approaches are employed to address complex decision-making problems, such as contribution margin allocation in multilevel scenarios or investment decisions under uncertainty. Models such as the Multi-Level Fixed-Charge Problem (MLFCP) developed by Gutiérrez (2021) and the bilevel programming in the energy market context by Muñoz et al. (2022) represent how cost structures can be formulated as optimization models. This approach extends the function of cost information from descriptive to normative, providing optimal solutions for organizations facing resource constraints and demand variabilities.

Third, phenomenological qualitative approaches play a crucial role in exploring the non-quantitative aspects of cost structures, such as managerial perceptions, inter-functional dynamics, and internal strategy adaptation to environmental changes. Lueg and Ilieva (2024) employed case study exploration and data triangulation to reveal that Customer Profitability Analysis (CPA) is not applied uniformly but is tailored to organizational culture, internal information needs, and competitive strategies.

Fourth, environment- and sustainability-based approaches reflect the integration of cost structures with social and ecological responsibility. Barouch and Bey (2018) and Halati and He (2018) show how dimensions such as carbon emissions, remediation costs, and pollution control are increasingly incorporated as relevant cost components in decision-making. This indicates that cost structures are not viewed solely from a financial perspective but also as strategic tools to balance economic objectives and environmental sustainability. Overall, the combination of qualitative and quantitative approaches in cost structure analysis suggests that method selection is heavily influenced by organizational

characteristics, strategic objectives, and the precision required in presenting cost information as a basis for effective and adaptive managerial decision-making.

#### *4.2.3 Integration of Cost Structure Analysis in Managerial Decision-Making*

The integration of cost structure analysis into managerial decision-making is a crucial element identified in this systematic literature review. Various studies sourced from reputable international databases, such as Scopus and Web of Science, indicate that a deep understanding of cost structures significantly contributes to decision-making effectiveness at different management levels. Beyond enhancing transparency regarding expenditures and resource consumption, cost structure analysis serves as the primary foundation for formulating more targeted policies based on valid, relevant, and accurately measurable data (Gutiérrez, 2021; Lueg & Ilieva, 2024).

Studies have shown that cost structure analysis has been integrated into the functional dimensions of managerial decisions, including pricing, capacity planning, cost control, business unit performance evaluation, and customer profitability analysis. For example, Lueg and Ilieva (2024) explain how the combination of customer characteristics and cost structures is a key determinant in setting differential pricing policies and guiding organizations in managing strategic customer relationships. Their study highlights that the use of CPA not only considers total revenue and costs per customer but also incorporates dynamic market contexts and flexible customer segmentation policy.

Meanwhile, Gutiérrez (2021) enriches this discourse using a mathematical optimization approach within cost accounting. He introduced the Multi-Level Fixed-Charge Problem (MLFCP) formulation as a tool to calculate multi-level contribution margins in complex decision-making scenarios. Using this model, managers can allocate resources based on more granular contribution values and plan investments and production with greater precision. This approach is particularly relevant in the manufacturing and logistics industries, where marginal efficiency and capacity constraints critically affect long-term profitability. In the context of sustainability and environmental impact management, Barouch and Bey (2018) demonstrated that integrating cost structures with environmental process models creates an information system capable of revealing hidden costs, such as emissions, waste, and post-production treatment. This model enables companies to internalize previously ignored external costs, thereby aligning decision-making with sustainability goals and corporate social responsibility.

Overall, integrating cost structure analysis into managerial decision-making practices provides a technical framework and shapes a comprehensive strategic approach. Mohammadi et al. (2022) and Muñoz et al. (2022) emphasized that challenges such as data uncertainty, operational complexity, and external environmental dynamics can be addressed through adaptive, informative, cost-structure-based analytical approaches. This underscores the importance of synergy between the technical aspects of cost analysis and the strategic decision-making context in supporting organizations to remain competitive, efficient, and sustainable amid ever-evolving market changes.

#### *4.2.4 Implementation Challenges in Cost Structure Analysis for Managerial Decision-Making*

In this systematic review, several implementation challenges related to cost structure analysis were consistently identified in the literature indexed in Scopus and Web of Science. The findings indicate that although cost structure analysis plays a significant role in supporting managerial decision-making, its implementation at the organizational level faces various technical, structural, and cultural barriers. One major issue identified is the complexity of cost analysis models, especially when combined with variations in the professional competencies of managerial accountants (CPAs) responsible for their design. As noted by Lueg and Ilieva (2024), organizational strategy diversity, service complexity, and organizational structure heterogeneity are key factors in determining the success or failure of implementing complex cost structure models.

Another major challenge is the accuracy and integration of data available in management information systems, particularly ERP systems. Mohammadi et al. (2022) highlight that many organizations still struggle to ensure alignment between operational data and cost reporting systems, directly affecting the effectiveness of cost analysis models. Misalignment between ERP modules or a lack of interoperability

among accounting, production, and logistics systems can render cost information outdated, biased, or even unusable for managerial purposes. In the context of sustainability, Barouch and Bey (2018) note the tension between short-term economic incentives and long-term environmental investment. Many organizations still view environmental costs as additional burdens that disrupt financial efficiency rather than as opportunities to create sustainable value. This creates a gap between environmental and financial objectives, which, according to Muñoz et al. (2022), can manifest as convergence (when objectives are aligned), divergence (when objectives conflict), or avoidance (when one objective is neglected). Identifying these conditions is essential for designing cost-management strategies aligned with sustainability principles.

Furthermore, the time-driven cost drivers used in TDABC models present specific challenges, particularly in multivariate operations and complex production networks. Gutiérrez (2021) shows that accurately assigning indirect costs across the full value chain becomes difficult when there is high variability in time, processes, and resources. High staff workload, complexity in implementing ABC comprehensively, and data inconsistencies across units are key obstacles to applying activity- or time-based cost structure analysis methods (Lueg & Ilieva, 2024; Mohammadi et al., 2022). These challenges are further exacerbated by limited computing capacity and a shortage of personnel with technical expertise in advanced cost-accounting models. The model programming complexity, minimal training, and resistance to system changes make the implementation of these methods difficult to apply broadly and sustainably in practice.

Overall, the successful integration of cost structure analysis into decision-making depends not only on methodological reliability but also on organizational readiness to manage change, establish consistent data systems, and design incentive policies that support both efficiency and sustainability in managerial decision-making. A holistic approach combining technical and organizational aspects is essential for cost structures to serve as truly effective decision-making tools in today's competitive and sustainability-oriented business environment.

#### *4.2.5 Conceptual Framework: The Relationship between Cost Structure, Accounting Information, and Managerial Decision-Making*

The conceptual framework developed in this study is grounded in Supply Chain Management (SCM) theory, which emphasizes the strategic use of cost information to support effective cross-functional and cross-sector managerial decision-making (Alexopoulou et al., 2024). In this context, the cost structure is positioned not merely as a technical representation of operational cost allocation but as a key element within the managerial accounting information system that serves as a foundation for strategic consideration. The cost structure functions as an accounting input, providing granular data on the proportion of fixed and variable costs, overhead distribution, and activity efficiency, which is then processed within accounting information systems to produce relevant and timely accounting information. This information ultimately underpins managerial decisions, including the following:

- (1) Pricing determination,
- (2) Evaluation of customer and product profitability,
- (3) Capacity and resource planning, and
- (4) Cost efficiency and environmental sustainability strategies (Gutiérrez, 2021; Zhao & Yang, 2022).

The findings of the systematic review indicate that this relationship is neither linear nor homogeneous. Several studies have highlighted the mediating role of organizational factors, such as:

- Accounting information technology systems (e.g., ERP or TDABC),
- Managerial accounting capacity and literacy, and
- Sectoral context and business scale:

Thus, the conceptual framework derived in this study can be represented as an integrative model consisting of three components:

1. Cost Structure: encompassing cost input variables, classification, and allocation models.
2. Accounting Information: The output of cost processing that generates managerial reports.

3. Managerial Decision-Making: Actions or policies based on information influenced by contextual variables (business scale, complexity, and industry sector).

This framework strengthens the theoretical contribution of this study by providing a systematic approach to bridging cost accounting theory and managerial practice across contexts. Additionally, it serves as a foundation for evaluating the effectiveness of cost information systems in supporting organizational competitiveness amid the complexities of modern business environments.

## 5. Conclusion

Cost structure analysis plays a crucial role in managerial accounting, as it provides comprehensive insights into the composition and behavior of costs within organizations. A comprehensive and systematic cost accounting system strongly supports effective and data-driven managerial decision-making. Based on the PRISMA methodology applied in this systematic literature review using the Scopus and Web of Science databases, it was found that research on cost structure analysis is geographically dispersed, with a dominance of quantitative approaches such as questionnaire surveys and regression analysis. The findings indicate that the quality and reliability of cost information are critical for supporting optimal decision-making. Although various methods are employed, there is a consistent emphasis on the importance of cost information as the foundation for managerial decisions, which remains the core finding of this paper.

### 5.1 Limitations and Future Research

This study had several limitations. Most studies employed quantitative approaches, which may insufficiently capture the social and cultural dynamics of the cost system implementation. Organizations should develop adaptive and innovative cost systems, including CVP and ABC, to support efficiency and effectiveness in resource management and strategic decision-making.

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