

A Bibliometric on Cost Management and Financial Efficiency

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ABSTRACT

This study aims to systematically map and analyze the global research landscape on cost management and financial efficiency using a bibliometric approach. Drawing on bibliographic data retrieved from the Scopus database, the study applies network and visualization techniques using VOSviewer to examine publication trends, influential literature, thematic structures, and collaboration patterns among authors, institutions, and countries. The findings reveal that the intellectual core of the field is dominated by themes related to costs, efficiency, cost-benefit analysis, and financial management, reflecting strong foundations in accounting and performance measurement. Over time, the research focus has evolved toward sustainability-oriented and technology-driven themes, including energy efficiency, sustainable development, artificial intelligence, blockchain, and risk management. Collaboration analysis shows a highly centralized global structure, with the United States and China acting as major hubs and elite institutions playing key roles in knowledge production. This study provides a comprehensive overview of the evolution and structure of cost management and financial efficiency research, offering valuable insights for scholars and practitioners while highlighting opportunities for future research that integrates sustainability, digital transformation, and broader international collaboration.

Keywords: Cost Management, Financial Efficiency, Bibliometric Analysis, Sustainability, Digital Transformation

1. INTRODUCTION

Cost management and financial efficiency have long been recognized as central pillars of organizational sustainability and competitiveness [1], [2]. In both private and public sectors, effective control and allocation of costs enable institutions to optimize the use of scarce resources while maintaining or improving performance outcomes. As markets become increasingly competitive and globalized, organizations are under constant pressure to deliver value at lower costs without compromising quality [3]. Scholars in management accounting and finance have emphasized that cost management is no longer limited to cost reduction but has evolved into a strategic function that supports decision-making, planning, and long-term value creation [4], [5]. Consequently, financial efficiency has emerged as a key indicator of how well organizations convert financial inputs into desirable outputs, reflecting overall managerial effectiveness.

The growing complexity of business environments has further amplified the importance of integrating cost management practices with broader financial efficiency goals. Technological advancements, digital transformation, and data-driven decision-making have reshaped how costs are identified, measured, and controlled [6]. Modern cost management approaches such as activity-based costing, target costing, and life-cycle costing have been widely discussed in the literature as tools to enhance transparency and accountability [7], [8]. At the same time, financial efficiency metrics such as return on assets, operating margins, and cost-to-income ratios are increasingly used by stakeholders to assess organizational health. The interaction between these practices and outcomes has generated a substantial and diverse body of academic research across disciplines [9].

Over the past few decades, scholarly interest in cost management and financial efficiency has expanded significantly, reflecting changes in economic conditions and organizational priorities. Periods of financial crises, rising operational costs, and heightened stakeholder scrutiny have

motivated researchers to explore how organizations can remain efficient under constrained conditions. Studies have examined cost management and efficiency in various contexts, including manufacturing, services, healthcare, education, and the public sector [10]. This diversity of contexts has enriched the literature but has also resulted in fragmented knowledge, making it challenging to identify dominant themes, influential studies, and emerging research trends.

Bibliometric analysis has gained prominence as a systematic approach to synthesizing large volumes of academic literature and revealing intellectual structures within a research field. By applying quantitative techniques to publication data, bibliometric studies can map research productivity, collaboration networks, thematic evolution, and citation impact over time [11]. In the fields of management and finance, bibliometric methods have been used to review topics such as performance measurement, sustainability accounting, and corporate governance. However, despite the extensive literature on cost management and financial efficiency, comprehensive bibliometric analyses that jointly examine these two interconnected concepts remain relatively limited.

Understanding the bibliometric landscape of cost management and financial efficiency research is valuable for both scholars and practitioners. For academics, it helps identify influential authors, journals, and theoretical perspectives that have shaped the field, as well as gaps that warrant further investigation. For practitioners and policymakers, insights from bibliometric patterns can highlight which approaches and frameworks have received sustained scholarly attention and empirical support. By consolidating dispersed knowledge, bibliometric analysis contributes to a more coherent understanding of how cost management practices influence financial efficiency across different organizational and institutional settings.

Despite the substantial volume of research addressing cost management and financial efficiency, the literature remains scattered across disciplines, methodologies, and application contexts, making it difficult to obtain a holistic view of the field's intellectual development. Many existing studies focus on specific techniques, industries, or performance indicators without situating their findings within the broader research landscape. As a result, there is limited clarity regarding the most influential contributions, prevailing research themes, collaboration patterns, and emerging trends that define the nexus between cost management and financial efficiency. The absence of a comprehensive bibliometric assessment hinders cumulative knowledge development and reduces the ability of researchers and decision-makers to build upon prior work in a systematic and informed manner. The objective of this study is to conduct a comprehensive bibliometric analysis of scholarly research on cost management and financial efficiency.

2. METHODS

This study adopts a bibliometric research design to systematically analyze the academic literature on cost management and financial efficiency. Bibliometric analysis is appropriate for this study as it enables quantitative evaluation of large volumes of scholarly publications and reveals patterns related to research productivity, intellectual structure, and thematic evolution. The study focuses on peer-reviewed journal articles to ensure the academic rigor and reliability of the data. Publications were identified using carefully selected keywords related to cost management and financial efficiency, including variations and closely associated terms, to capture a comprehensive dataset that reflects the breadth of the field.

The data collection process involved retrieving bibliographic records from a major academic database widely recognized for indexing high-quality research in management, accounting, and finance. The time span of the publications was determined to capture both the historical

development and recent advancements in the field. After data retrieval, a screening process was conducted to remove duplicate records and publications that were not directly relevant to the study's scope. Bibliographic information such as authors, publication year, journal title, abstracts, keywords, citations, and affiliations was extracted and organized for analysis. This structured dataset formed the basis for subsequent bibliometric procedures.

Data analysis was conducted using established bibliometric techniques, including citation analysis, and co-occurrence analysis of keywords. Citation analysis helped determine influential publications and foundational studies within the field. Additionally, keyword co-occurrence analysis was employed to identify dominant research themes and emerging topics related to cost management and financial efficiency. The findings were then interpreted to provide insights into the evolution, structure, and future research directions of the field, ensuring methodological transparency and reproducibility.

3. RESULTS AND DISCUSSION

3.1 Network Visualization

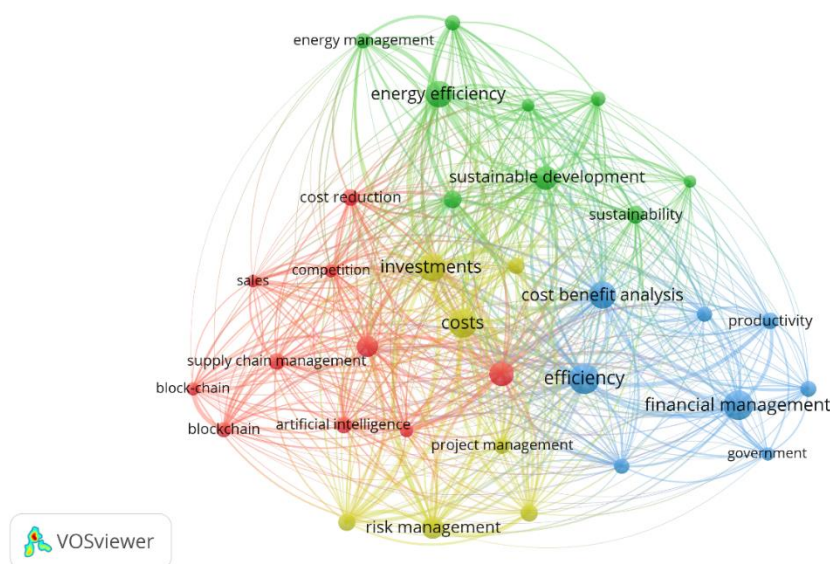


Figure 1. Network Visualization

Source: Data Analysis Result, 2026

Figure 1 shows a highly interconnected research landscape around cost management and financial efficiency, indicating that the field is conceptually dense and multidisciplinary. The central position of keywords such as costs, efficiency, and cost benefit analysis suggests that these concepts function as intellectual anchors linking diverse research streams. The tight clustering and numerous cross-links imply that studies rarely treat cost management or financial efficiency in isolation; instead, they are embedded within broader managerial, technological, and sustainability-oriented discussions. The blue cluster, dominated by financial management, efficiency, productivity, and government, reflects a strong emphasis on financial efficiency in organizational and public-sector contexts. This cluster highlights research focused on performance measurement, resource allocation, and efficiency assessment, particularly within governmental or institutional settings. The prominence of productivity indicates that financial efficiency is frequently evaluated through output–input relationships, reinforcing traditional efficiency paradigms rooted in accounting, public finance, and performance management literature.

The green cluster centers on energy efficiency, energy management, sustainability, and sustainable development, revealing a major thematic shift toward environmental and sustainability concerns within cost management research. The strong links between energy efficiency and cost

reduction suggest that financial efficiency is increasingly framed through sustainability lenses, where reducing energy consumption is not only an environmental goal but also a strategic cost-saving mechanism. This cluster signals the growing integration of cost management with ESG-related and sustainability-driven decision-making. The red cluster highlights the role of digital and operational technologies, with keywords such as supply chain management, artificial intelligence, blockchain, competition, and sales.

This indicates an emerging research front where cost management and efficiency are studied in relation to digital transformation and competitive strategy. The presence of AI and blockchain suggests that recent studies are exploring how advanced technologies enhance cost transparency, reduce transaction costs, and improve efficiency across supply chains and market-oriented activities. The yellow cluster, encompassing risk management, investments, project management, and costs, represents an integrative managerial perspective where cost efficiency is closely tied to risk assessment and investment decision-making. This cluster bridges strategic and operational viewpoints, showing that efficiency considerations increasingly inform project evaluation, capital allocation, and risk mitigation processes.

3.2 Overlay Visualization

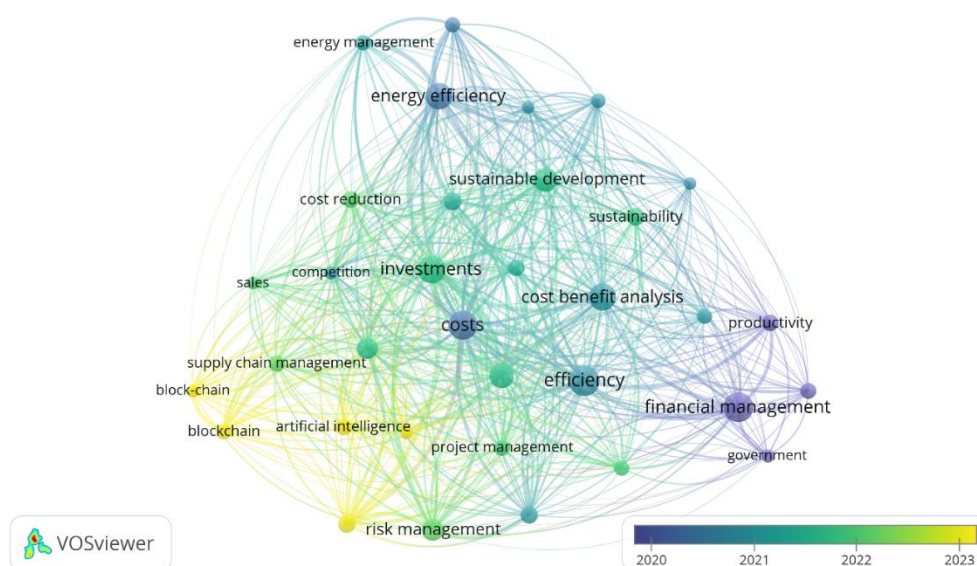


Figure 2. Overlay Visualization

Source: Data Analysis Result, 2026

Figure 2 reveals a clear temporal evolution in cost management and financial efficiency research between 2020 and 2023. Earlier studies (blue–purple tones) are concentrated around traditional themes such as financial management, government, productivity, and energy efficiency, indicating an initial emphasis on efficiency measurement, public-sector performance, and energy-related cost control. These topics reflect the foundational concern of how organizations and governments manage resources efficiently, particularly during periods of economic pressure and policy-driven efficiency reforms. Moving toward the mid-period (green tones), the research focus expands to include cost benefit analysis, sustainable development, sustainability, cost reduction, and investments. This shift suggests a conceptual integration of financial efficiency with sustainability-oriented decision-making, where cost management is increasingly evaluated in terms of long-term value creation rather than short-term savings. The strong interconnections among these keywords indicate that scholars are linking efficiency analysis with investment appraisal and sustainability outcomes, reflecting broader global agendas related to sustainable finance and responsible resource management.

The most recent research trends (yellow tones) highlight emerging topics such as artificial intelligence, blockchain, supply chain management, risk management, and competition. This indicates a growing interest in how digital technologies and advanced risk frameworks enhance cost efficiency and financial performance in complex, uncertain environments. The prominence of these themes suggests that future research is likely to focus on technology-enabled cost management systems, data-driven efficiency improvements, and resilience-oriented financial strategies, particularly in dynamic and highly competitive contexts.

3.3 Citation Analysis

Table 1. The Most Impactful Literatures

Citations	Authors and year	Title
2525	[12]	Systematic review: Impact of health information technology on quality, efficiency, and costs of medical care
1482	[13]	Distance still matters. The hard reality of global expansion.
1395	[14]	Can electronic medical record systems transform health care? Potential health benefits, savings, and costs
914	[15]	10 years of health-care reform in China: progress and gaps in Universal Health Coverage
806	[16]	The primary health-care system in China
714	[17]	Financial hardships experienced by cancer survivors: A systematic review
681	[18]	Corporate governance and green innovation
547	[19]	Change in care regimes and female migration: The 'care drain' in the Mediterranean
534	[20]	The business case for investing in physician well-being
524	[21]	The economic burden of major adult visual disorders in the United States

Source: Scopus, 2025

3.4 Density Visualization

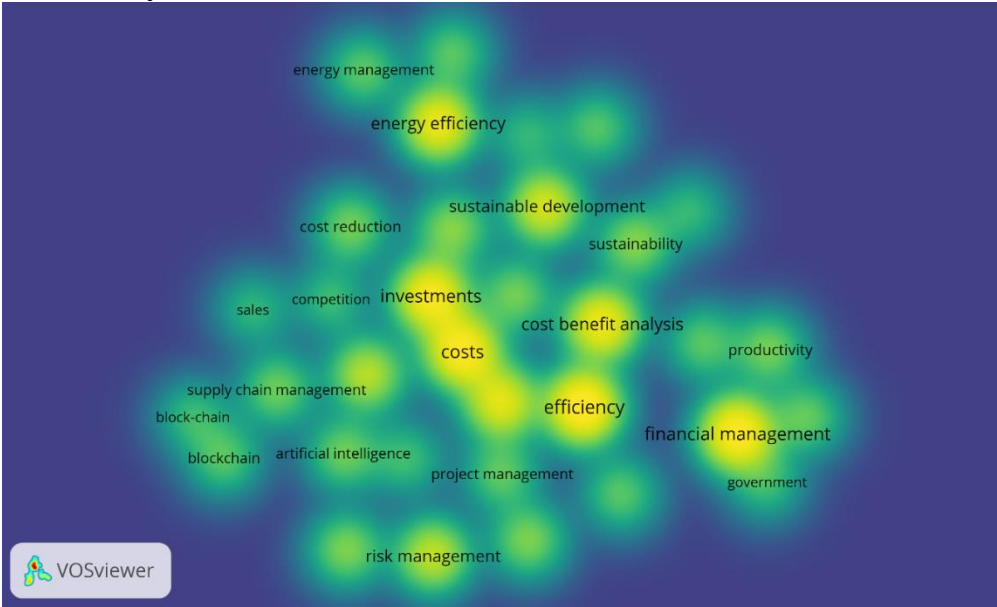


Figure 3. Density Visualization

Source: Data Analysis Result, 2026

Figure 3 highlights the core intellectual concentration of research on cost management and financial efficiency, with the highest intensity centered on the keywords costs, efficiency, cost benefit analysis, and financial management. These bright, dense areas indicate that efficiency evaluation and cost-related decision-making form the dominant foundation of the literature. Closely connected terms such as productivity and government further suggest that a significant portion of studies focuses on measuring and improving financial efficiency within organizational and public-sector contexts, reinforcing the central role of performance and resource optimization in this research domain. Surrounding this core, medium-density areas reveal supporting and emerging thematic domains, including energy efficiency, sustainable development, sustainability, and cost reduction, which demonstrate the integration of environmental considerations into cost and efficiency analysis. Lower-density but clearly visible themes such as artificial intelligence, blockchain, supply chain management, and risk management point to newer and less saturated research directions.

3.5 Co-Authorship Network

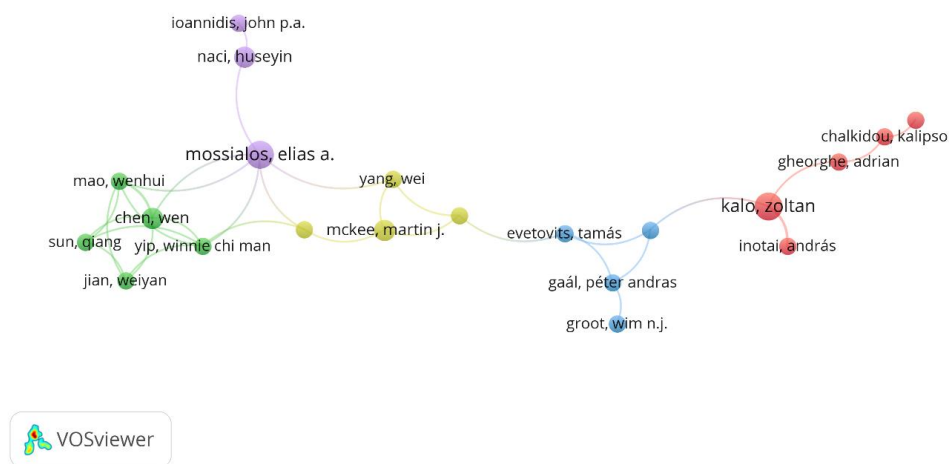


Figure 4. Author Visualization

Source: Data Analysis Result, 2026

Figure 4 reveals a fragmented but interconnected scholarly structure in cost management and financial efficiency research, characterized by several small collaboration clusters rather than a single dominant research community. Central figures such as Mossialos, Elias A. and Evetovits, Tamás act as key bridging authors, linking otherwise separate groups of researchers across different regions. Distinct clusters such as the Kalo–Chalkidou group, the Gaál–de Groot cluster, and the Chen–Sun–Jiang cluster suggest strong intra-group collaboration but limited cross-cluster interaction. This pattern indicates that while the field benefits from specialized expertise and regional research teams, there remains significant potential for broader international and interdisciplinary collaboration to enhance knowledge integration and theoretical convergence.

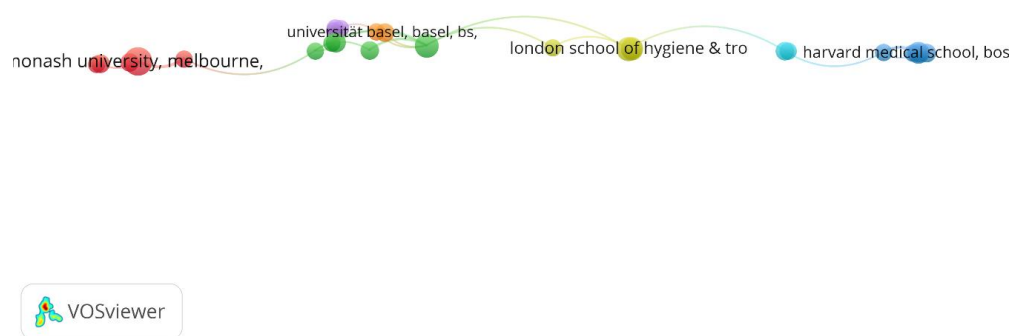


Figure 5. Affiliation Visualization
Source: Data Analysis Result, 2026

Figure 5 illustrates a highly selective and linear pattern of inter-institutional cooperation within cost management and financial efficiency research. A small number of globally prominent universities such as Monash University, Universität Basel, the London School of Hygiene & Tropical Medicine, and Harvard Medical School form the core of the network, connected through limited but meaningful collaborative links. The structure indicates that knowledge production in this field is concentrated within elite institutions, with collaboration occurring through specific research partnerships rather than broad, multi-institutional consortia. This pattern suggests both the strength of specialized institutional expertise and a clear opportunity for expanding cross-institutional and cross-regional collaboration to enhance the diversity and reach of future research.

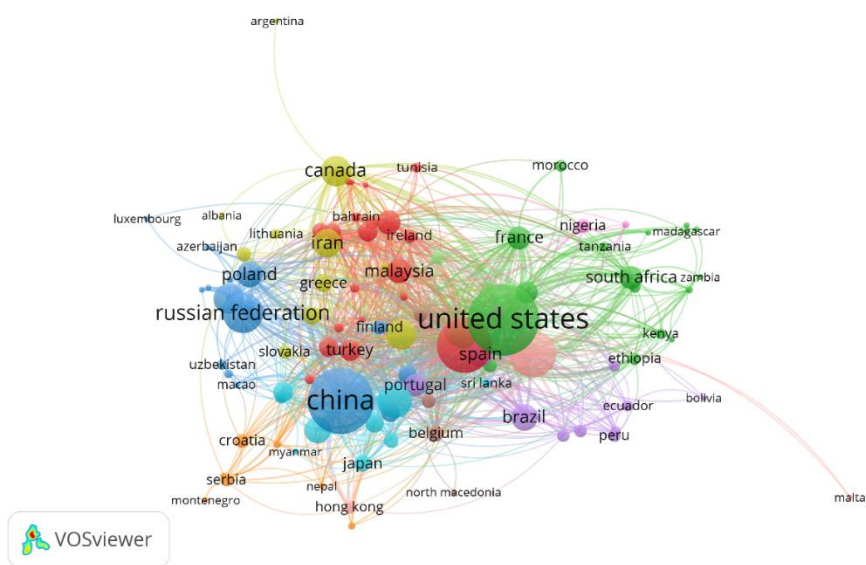


Figure 6. Country Visualization
Source: Data Analysis Result, 2026

Figure 6 demonstrates a highly centralized and globally connected structure in cost management and financial efficiency research, with the United States and China emerging as the two dominant hubs. The United States occupies the most central position, maintaining extensive collaborative links with countries across Europe, Africa, Asia, and Latin America, indicating its role as a primary global knowledge broker. China forms a second major cluster with strong regional and international connections, particularly with Asian and European countries, reflecting its growing influence in efficiency and cost-related research. European countries such as Spain, France, Portugal, and Belgium act as important intermediaries linking major hubs to smaller research communities, while emerging economies in Africa and Latin America appear more peripheral yet increasingly integrated.

Discussion

The bibliometric findings reveal that research on cost management and financial efficiency is anchored in a well-established core focusing on costs, efficiency, cost-benefit analysis, and financial management. These themes dominate the intellectual structure of the field and reflect its strong roots in accounting, public finance, and performance measurement. The dense interconnections among these keywords indicate that efficiency is predominantly conceptualized as the optimization of resources relative to outputs, both in organizational and governmental contexts. This confirms that traditional efficiency-oriented frameworks remain central, serving as the theoretical backbone upon which newer perspectives are progressively integrated.

The overlay and density visualizations further demonstrate a clear thematic evolution, where cost management research has expanded beyond conventional control and measurement toward sustainability, energy efficiency, and sustainable development. This shift suggests that financial efficiency is increasingly framed within long-term value creation and environmental responsibility agendas. At the same time, emerging themes such as artificial intelligence, blockchain, supply chain management, and risk management indicate a growing interest in digital and data-driven approaches to cost efficiency. These developments highlight a transition from static cost-control models toward dynamic, technology-enabled systems capable of addressing complexity, uncertainty, and competitiveness in modern organizations.

From a collaboration perspective, the country and institutional networks show a highly centralized structure dominated by the United States and China, with leading universities acting as selective hubs of knowledge production. While this concentration underscores the role of advanced research ecosystems in shaping the field, it also points to limited cross-regional integration, particularly involving developing and emerging economies. The fragmented co-authorship patterns suggest opportunities for broader international and interdisciplinary collaboration, which could enrich theoretical development and contextual diversity. Future research would benefit from expanding empirical settings, strengthening South-South collaboration, and integrating sustainability and digital transformation more explicitly into cost management and financial efficiency frameworks.

CONCLUSION

This bibliometric study provides a comprehensive overview of the intellectual structure, thematic evolution, and collaboration patterns in cost management and financial efficiency research. The findings demonstrate that the field is grounded in traditional efficiency and cost-analysis frameworks while increasingly incorporating sustainability-oriented and technology-driven perspectives, such as energy efficiency, digital transformation, and risk-based management. Although knowledge production is concentrated in a small number of countries and elite institutions, emerging themes and expanding global participation indicate significant opportunities for future research. Overall, this study contributes by clarifying the development trajectory of the

field and highlighting promising directions for advancing cost management and financial efficiency research in more integrated, sustainable, and globally inclusive ways.

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