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Mapping Research on Financial Institution Cash Flow Analysis: A Bibliometric Analysis

Rahmadani Aidil Fitrohcahya[1*] Dzaki Muqaffa[2]
[1*] State Islamic University of Maulana Malik Ibrahim Malang
[2] State Islamic University of Maulana Malik Ibrahim Malang
rahmadaniaidilfc@mail.com

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Abstract: This study aims to analyze the cash flows of financial institutions through a bibliometric approach, using secondary data from income statements and cash flow statements. Financial institutions, which consist of bank and non-bank financial institutions, play an important role in the stability of the financial system in Indonesia. The bibliometric analysis method was applied to evaluate the pattern of scientific publications related to cash flow, identifying trends, challenges and opportunities in financial management. The data used includes scientific publication articles from accredited national journals within the time span of 2014 to 2024. The results showed that there were 79 articles published, with visualization mapping dividing the research into 5 clusters and 17 items. This research suggests that future studies use a wider data sample and a longer time span to obtain a more comprehensive and complex mapping in the field of cash flow of financial institutions.

Keywords: Analysis, Cash Flow, Financial Institutions, Mapping.

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INTRODUCTION

Cash flow analysis is one of the most important aspects in evaluating the financial performance of financial institutions. Cash flow provides a clear picture of an entity's liquidity, solvency, and profitability factors that are crucial for both managerial and investment decision-making. In the context of financial institutions, a deep understanding of cash flow not only assists in resource management but also plays a vital role in strategic planning and risk mitigation Ariyo & Habimana (2025). Along with the increasing complexity of modern financial systems, research on cash flow analysis has shown significant development through diverse methodological approaches that reflect the dynamics and adaptive needs of financial institutions (Seretidou et al 2025).

Several recent studies affirm the importance of cash flow analysis in explaining the performance and stability of financial institutions. Research by Sugiarto & Damayanti (2023) demonstrated that financial stability and free cash flow have a significant influence on earnings management in the consumer non-cyclicals sector. In addition, Ishak (2025) highlighted the relationship between financial performance and firm value, which is influenced by asset structure and firm size, indicating that cash flow analysis can enhance understanding of corporate value formation. Furthermore, Puspa (2023) found that good financial performance, measured through cash flow ratios, can predict earnings growth. Hanifah (2023) also showed that liquidity and the adequacy of operational cash flow significantly affect the detection of financial distress risks. Adeyemi et al. (2022) found that cash flow analysis could be effectively used in predicting bank failure. Moreover, Safitri & Geraldina (2024) confirmed that bank liquidity management strategies which largely depend on cash flow affect the banking performance in the ASEAN region.

In the context of Islamic financial institutions, Mikou et al (2024) proved that effective cash flow management influences financial stability and the resilience of Islamic financial institutions against liquidity risks. Similarly, Mubarok et al (2025) explained that cash flow ratios can serve as a measure of operational efficiency in Islamic banks and as a key indicator in maintaining a balance between profitability and Sharia compliance. Supporting this, Adhikari (2022) emphasized that financial ratio analysis, including cash flow ratios, provides deep insights into operational effectiveness and competitiveness of financial institutions amidst global economic changes.

However, despite the continuous development of cash flow research, there remains an academic gap in the form of the lack of systematic mapping that identifies the direction of thematic development, methodology, and citation trends in cash flow analysis studies within financial institutions. Most previous studies have focused on the direct relationship between cash flow and financial performance without integrating bibliometric analysis that can illustrate the intellectual structure and evolution of this field. Therefore, this study aims to fill that gap by conducting a bibliometric analysis of the literature related to cash flow analysis in financial institutions. Academically, this research contributes by identifying thematic evolution, influential authors, and research directions in the field of cash flow analysis. Practically, it is expected to provide valuable insights for practitioners and policymakers in formulating liquidity management strategies, financial planning, and institutional sustainability based on current scientific trends.

RESEARCH METHOD

This research uses a research method with a quantitative approach to bibliometric studies. Bibliometric analysis is a method used to evaluate and analyze patterns of scientific publications in a particular field. This method combines statistical and mathematical techniques to measure and analyze literature, including articles, books, and other scientific documents. Bibliometric analysis aims to provide an overview of developments, trends, and collaborations in research, as well as to identify the most influential authors, journals, and topics in a discipline (Diwyarthi et al., 2023; Judijanto et al., 2023).

The object of research is financial institutions. The type of data used is secondary data. The scope of the data used is scientific publication articles on the financial condition of financial institutions originating from national and accredited journals. The source of data retrieval comes from the google scholar website. Data analysis tools are Mendeley Dekstop, VOSviewer, and Perish software. Data collection techniques include: (1) visiting the Garuda website and Perish software, then searching for journal titles based on the title words category with the keywords “Cash Flow”, “Financial Institutions” and “Cash Flow of Financial Institutions” in all years (2014-2024); (2) identifying multiple journal titles; (3) downloading RIS (Research Information Systems) and PDF (Portable Document Format) format files from all journals that have collected data; and (4) entering RIS data files into Mendeley Dekstop software.

Data analysis techniques include: (1) mapping RIS data files on Mendeley Desktop based on the order of year, author, and publisher; (2) mapping the results of bibliometric network visualization and scientific publication trends using the VOSviewer (Visualization of Similarities) algorithm software based on the number of clusters and items; and (3) mapping topics, methods.

RESULT AND DISCUSSION

Result

1. Mapping the distribution of research on cash flows of financial institutions

The findings of this study are to examine the number of articles published on the Garuda website during the period 2014-2024. Based on data obtained from Google Scholar website research, articles related to cash flow of financial institutions, as many as 79 titles originating from accredited national journals. In 2021, it was the year with the most publications, namely 21 publications.

Table 1. Mapping the distribution of research

Year	*Number of Publications*	Year	Number of Publications	Year	Number of Publications	Year	Number of Publications
2014	1	2015	1	2016	1	2017	3
2018	4	2019	4	2020	6	2021	21
2022	16	2023	13	2024	9	***Totally***	79

Source: Data Processed (2025)

2. Bibliometric mapping around cash flows of financial institutions

The results of article searches on the Google Scholar website were exported in RIS (Research Information Systems) data format, then inputted and analyzed using VOSviewer software. The results are as follows:

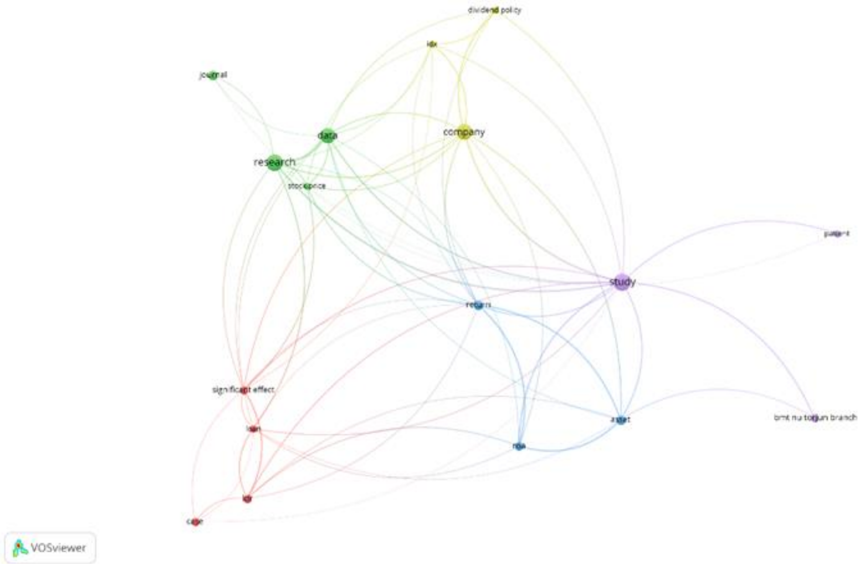

Figure 1. Illustration of the relationship of the research development map around the Islamic Capital Market

Source: Data Processed (2025)

The VOSviewer visualization provides a comprehensive representation of the thematic structure and intellectual relationships among research topics related to cash flow. The visualization identifies five clusters, each represented by a different color, where:

1) Cluster 1 (red) includes Case, LDR, Loan, and Significant Effect. This cluster focuses on studies analyzing the impact of lending ratios (LDR) and loan performance on liquidity and profitability, reflecting research on the operational dynamics of financial institutions.
2) Cluster 2 (green) consists of Data, Journal, Research, and Stock Price, representing studies with an emphasis on empirical modeling, research methodology, and the effect of financial indicators on stock performance.
3) Cluster 3 (blue) includes Asset, Return, and ROA, highlighting research that explores the relationship between asset management efficiency and return-based financial ratios, such as Return on Assets (ROA).
4) Cluster 4 (yellow) comprises Company, Dividend Policy, and IDX, illustrating studies that investigate firm-level financial decisions, including dividend policy and corporate performance within the Indonesian Stock Exchange (IDX).
5) Cluster 5 (purple) contains BMT No Torjun Branch, Patient, and Study, referring to case-based research conducted on Islamic microfinance institutions, emphasizing localized and specific financial case studies.

The color of each cluster represents distinct but related research themes, demonstrating the diversity of research focuses within the topic of cash flow in financial institutions. The node size indicates the frequency of keyword occurrences within the dataset larger nodes, such as Loan, ROA, and Stock Price, signify more frequently used keywords, suggesting their central role in shaping the literature. Meanwhile, the links or connecting lines between nodes illustrate the co-occurrence relationships among keywords. Thicker and shorter lines represent stronger relationships, meaning that those keywords often appear together in the same articles.

Overall, the visualization illustrates that research on cash flow in financial institutions has evolved into several interconnected thematic areas, encompassing liquidity management, profitability, asset efficiency, stock performance, and dividend policy. These interconnections signify that scholars increasingly view cash flow analysis not only as an indicator of short-term financial health but also as a strategic tool in decision-making, investment evaluation, and policy formulation for both conventional and Islamic financial institutions.

Discussion

Based on a review of literature from various research journals that have been downloaded, several key variables frequently discussed in the context of cash flows of financial institutions are Loan to Deposit Ratio (LDR), Loan, and Return on Assets (ROA). These three concepts do not appear in isolation within the literature but rather form interconnected thematic clusters as visualized in the bibliometric mapping using VOSviewer. The relationships among these clusters reflect the evolving direction of research that emphasizes institutional efficiency, financial performance, and liquidity management (Karadayi, 2023).

First, the Loan to Deposit Ratio (LDR) is a ratio used to measure the liquidity and efficiency of financial institutions especially banks in channeling credit. This ratio compares the total loans disbursed with the total deposits collected from customers. In the context of liquidity theory, LDR reflects the balance between a bank's ability to meet short-term obligations and its efficiency in using collected funds to generate income (Pandey, 2021). A very high LDR may indicate potential liquidity risk, as the bank may have lent out more funds than it has collected, while a very low LDR may signal suboptimal utilization of funds, leading to missed profit opportunities. For this reason, Bank Indonesia sets an ideal LDR range between 78% and 100% to maintain national banking stability. In the bibliometric visualization, LDR appears in the red cluster together with the keywords *Loan* and *Significant Effect*, reflecting a dominant research focus on analyzing the impact of financial ratios on bank performance and liquidity risk. For investors, LDR serves as a key analytical tool for assessing a bank's performance and risk level, while for depositors, it acts as an indicator of institutional stability. Thus, LDR functions not only as a measure of bank soundness but also as a strategic variable closely related to risk management and financial efficiency theories (Nurwulandari, 2022).

Second, Loan refers to a sum of money borrowed by individuals or organizations from financial institutions with an agreement to repay within a certain period, usually with interest or profit-sharing. In the financial system, loans serve as crucial instruments to support consumption, business expansion, and investment. From the perspective of financial intermediation theory, lending illustrates the role of banks as intermediaries between surplus and deficit economic agents, thereby contributing to the efficiency of resource allocation within the economy (Diamond & Dybvig, 1983). Loans may be classified based on purpose consumer loans for individual needs, productive loans for business development, and investment loans for capital expansion. In the bibliometric network, the keyword *Loan* is strongly connected with *LDR* and *ROA*, suggesting that many studies in this cluster explore the interplay between credit distribution policies, liquidity efficiency, and profitability in financial institutions. This indicates that credit activity plays a central role in determining cash flow dynamics and overall financial performance. Furthermore, the strong linkage between Loan and ROA highlights a growing research orientation toward evaluating how credit allocation influences asset returns and operational efficiency (Kurniawati et al 2024).

Third, Return on Assets (ROA) is a ratio used to measure how effectively a financial institution generates profit from its total assets. ROA reflects management's efficiency in using resources to produce earnings. According to financial performance theory, ROA represents the outcome of operational efficiency, asset utilization, and investment strategy (Brigham & Houston, 2019). A higher ROA indicates strong management performance and productive use of assets, while a low ROA suggests inefficiencies in asset deployment. In the bibliometric mapping, ROA appears in the blue cluster associated with the keywords *Asset* and *Return*, indicating that research in this cluster primarily focuses on the relationship between asset efficiency and profitability levels. For financial managers, ROA serves as a key indicator for evaluating strategic decisions and resource management, whereas for investors, it provides a comparative measure of performance across firms within the same industry. Therefore, ROA is strongly aligned with financial institution efficiency theory and serves as a central variable in assessing profitability and institutional health (Ikhwan & Riani (2022).

Overall, the interconnectedness of LDR, Loan, and ROA demonstrates an integrative relationship among liquidity theory, financial intermediation theory, and financial performance theory. This inter-cluster linkage indicates that current research on cash flows in financial institutions is evolving toward a more comprehensive understanding of the balance between risk, efficiency, and profitability. From a theoretical perspective, future research is expected to move toward integrating liquidity efficiency and asset management concepts in the context of sustainable financial system stability, encompassing both conventional and Islamic financial institutions.

CONCLUSION

The findings of this study highlight that research on cash flow within financial institutions has evolved into several interrelated thematic clusters, indicating a dynamic progression of knowledge in this field. The bibliometric analysis reveals that contemporary studies have increasingly linked concepts such as liquidity, profitability, and financial policy to the broader framework of financial management efficiency. This trend reflects a growing academic interest in integrating cash flow analysis with strategic financial decision-making and institutional performance improvement.

Scientifically, this study contributes novelty by providing a structured bibliometric mapping that identifies five dominant research clusters, each representing a specific dimension of financial institution management. The study offers an intellectual overview of how cash flow research has developed over the past decade and clarifies the theoretical linkages among liquidity management, profitability optimization, and capital structure analysis. By employing bibliometric visualization through VOSviewer, this study also advances methodological innovation in understanding the intellectual landscape of financial research.

Practically, the results of this research provide valuable insights for financial managers, policymakers, and researchers in identifying future research directions and designing effective financial strategies. The mapping outcomes can be used to formulate evidence-based liquidity management policies, enhance institutional resilience, and promote the integration of cash flow management into sustainable financial planning. Future research is encouraged to expand the dataset, extend the time horizon, and incorporate comparative analysis across financial systems to strengthen generalizability and uncover emerging trends in financial management research.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest regarding the research, authorship, or publication of this article.

ETHICS STATEMENT

The authors confirm that no generative AI tools were used to generate the core ideas, analyses, or findings of this manuscript. Any AI assistance was limited solely to language refinement and formatting, while the authors remain fully responsible for the originality and integrity of the content.

DECLARATION OF GENERATIVE AI

No generative AI or AI-assisted technologies were used in the writing of this manuscript.

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