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Mapping the Research Landscape: A Bibliometric Analysis of Working Capital Management

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ABSTRACT

This study conducted a bibliometric analysis of the development of the working capital management (WCM) literature by reviewing 99 journal articles from 2011 to 2025. The results show that WCM is a growing research field with a primary focus on working capital efficiency, the cash conversion cycle (CCC), and corporate profitability. The study identified that the majority of contributions come from authors and institutions in Europe and Asia, with a significant increase in international collaboration. Furthermore, there is a shift in research themes towards investment, banking, sustainability, and digitalization. While the WCM literature is well-established, this study highlights the need to delve deeper into the MSME sector, emerging markets, and the integration of behavioral and managerial strategic perspectives. These findings provide a strong foundation for future research directions that are more multidisciplinary and contextual.

1. Introduction

Working capital management (WCM) is an important foundation in corporate financial management. The concept of WCM is rooted in modern financial management theory, initially developed by Weston & Brigham (1972) and later expanded upon by(Gitman & Zutter, 2015)In 1974, the cash conversion cycle (CCC) was introduced as a primary indicator of working capital management efficiency. This theory emphasizes that managing current assets (cash, receivables, inventory) and current liabilities in a balanced manner can maintain liquidity, minimize the cost of capital, and ultimately increase a company's profitability.(Gitman & Zutter, 2015) (.Ehrhardt & BRIGHAM, 2019)

Empirically, international literature confirms the importance of WCM efficiency in determining business performance.(Afrifa & Tingbani, 2018)shows that MSMEs with optimal working capital management tend to have higher profitability than those that are inefficient. A cross-country study by(Kiymaz et al., 2024)also found that the impact of WCM on firm performance differs between developed and developing countries, with a greater impact in developing markets due to limited access to external capital.

Research trends on WCM show a significant increase in the last two decades. Bibliometric analysis by(Nobanee & Dilshad, 2021)A review of publications from 1954–2020 found more than 1,200 articles discussing WCM, with a peak in growth occurring after the 2008 global financial crisis. The study also identified five main clusters: profitability, liquidity, credit policy, cash conversion cycle, and working capital investment strategy. Similar findings were confirmed by(Martinho, 2021), which mapped the WCM literature using Scopus and Web of Science, found that the United States, the United Kingdom, India, and China were the most productive countries in producing related publications.

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However, existing literature mapping shows that WCM research is still dominated by a purely financial approach and has not yet integrated strategic factors or decision-making behavior. However, recent developments in behavioral finance highlight the role of cognitive biases such as overconfidence in influencing the effectiveness of financial strategies.(Malmendier & Tate, 2005) Similarly, entrepreneurial orientation (EO) which includes innovation, proactivity, and risk taking has been shown to be positively correlated with business performance.(Lumpkin & Dess, 1996)but its relationship with WCM in a bibliometric framework has rarely been studied.

Thus, a bibliometric analysis of the WCM literature is crucial for mapping research developments, identifying the most productive author and country networks, and identifying remaining research gaps. This study seeks to contribute by not only mapping the global WCM research landscape but also proposing an integration with the perspective of entrepreneurial strategy (EO) and behavioral dimensions (overconfidence). This approach is expected to enrich academic understanding and provide a foundation for empirical research in the context of developing countries and the MSME sector.(Afrifa & Tingbani, 2018) (Martinho, 2021)

2. Literature Reviews

Bibliometric study conducted by(Martinho, 2021),(Nobanee & Dilshad, 2021), as well as(Mirón Sanguino et al., 2024)emphasized that research on working capital management (WCM) has grown rapidly over the past two decades. Bibliometric mapping results indicate a dominant cluster focusing on the relationship between WCM and profitability, liquidity, and the cash conversion cycle (CCC).(Martinho, 2021)identify research limitations in linking WCM with sustainability aspects, while(Nobanee & Dilshad, 2021)emphasizes the existence of five main theme clusters and the direction of future research development.(Martinho, 2021) added that the structure of the WCM literature also shows an expansion of the theme towards resilience and supply chain financing, although research is still dominated by developed countries.

Meanwhile(Díaz Ortega et al., 2025) reaffirmed the relevance of WCM to profitability by conducting a bibliometric review of publications from 2000–2023. The results indicate that CCC is the most central indicator in the literature, widely used to explain a company's working capital efficiency. Furthermore, Ortega's (2024) research revealed that publication trends increased after the 2008 global crisis and continued through the post-pandemic period, with a focus on inventory management, accounts receivable, and accounts payable. This study also underscores the importance of expanding WCM research not only in the context of large companies but also in MSMEs with limited access to external capital.

From an empirical perspective(Kiymaz et al., 2024)This study compared the impact of WCM on firm performance in developed and emerging markets. The results of the study indicate that the effect of WCM on performance is greater in developing countries because firms tend to rely more on internal working capital efficiency due to limited access to financing. Conversely, in developed countries, the impact of WCM is relatively moderate due to broader access to external capital. This finding reinforces the results of bibliometric mapping that the economic and institutional context significantly influence the relationship between WCM and performance. Therefore, the integration of the results of bibliometric studies (Martinho, 2021),(Mirón Sanguino et al., 2024) (Nobanee & Dilshad, 2021) (Díaz Ortega et al., 2025), and empirical evidence ((Kiymaz et al., 2024), providing a strong basis for further research linking WCM with sustainability strategies, entrepreneurial orientation, and managerial behavioral factors.

3. Methodology

3.1 Data Collection

The data collection process was carried out in two main stages. In the first stage (Initial Search), articles were searched through the Scopus database and the Publish or Perish application. The initial search yielded 582 articles, which were then filtered using the Economics and Finance field filter, reducing the number to 264 articles. Furthermore, articles that did not fall into the journal category—such as conference papers, book chapters, reviews, and books—were removed from the sample, resulting in 325 journal articles that were more relevant to the research topic.

In the second stage (Selecting Journal Articles), further screening was conducted to ensure data quality and consistency. Articles in languages other than English, open access articles, and articles still in press were excluded from the list. After going through this selection stage, the final number of articles obtained was 99 journal articles. These articles were then further processed in a bibliometric analysis to produce the findings in the Results and Discussion section. This process demonstrated

a rigorous selection process, resulting in only about 17% of the initial 582 articles being truly relevant and worthy of further in-depth analysis. The steps taken in producing 99 journal articles are shown in Figure 1.

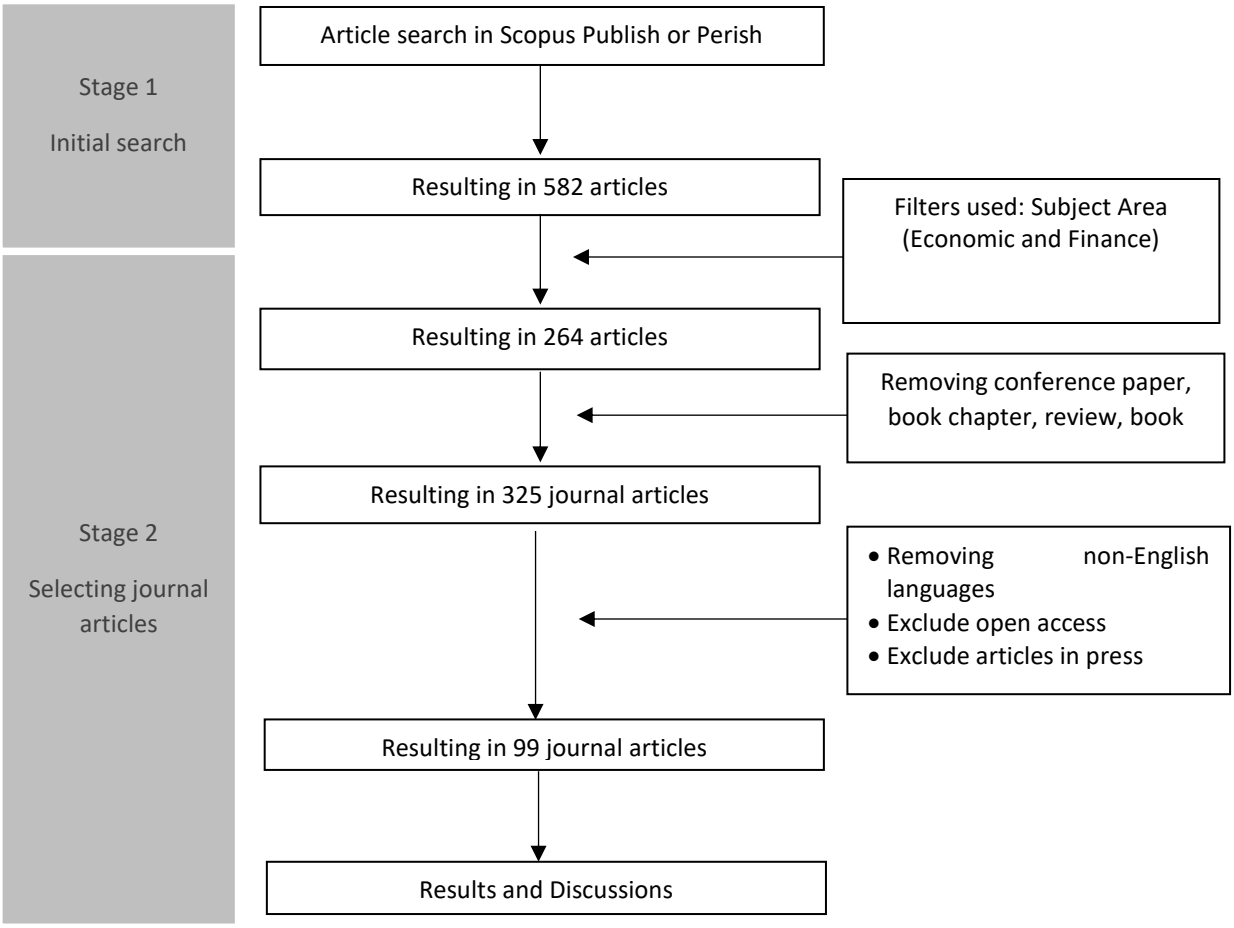


Figure 1. The steps taken in producing 99 journal articles

3.2 Machine Learning Tools

This study uses R Studio for bibliometric analysis to obtain more accurate and clear results. R Studio is a software suite developed by Aria and Cuccurullo that provides a set of tools for quantitative research. The latest version of this application is a web-based interface (Biblioshiny), introduced to help users conduct bibliometric analysis without requiring programming skills.(Aria & Cuccurullo, 2017)

4. Results and Discussion

4.1 Descriptive Statistics and Overview of the Sample

Table 1 summarizes the key information from the bibliometric analysis of 99 articles published between 2011 and 2025. These publications come from 64 journal sources with an annual growth rate of 5.08%, indicating steady growth in research on this topic. The average document age is 4.23 years, indicating that the articles used are relatively recent. The average citation rate per document is 19.95, indicating a relatively high level of research visibility and impact. In total, 624 references are used in this sample of articles.

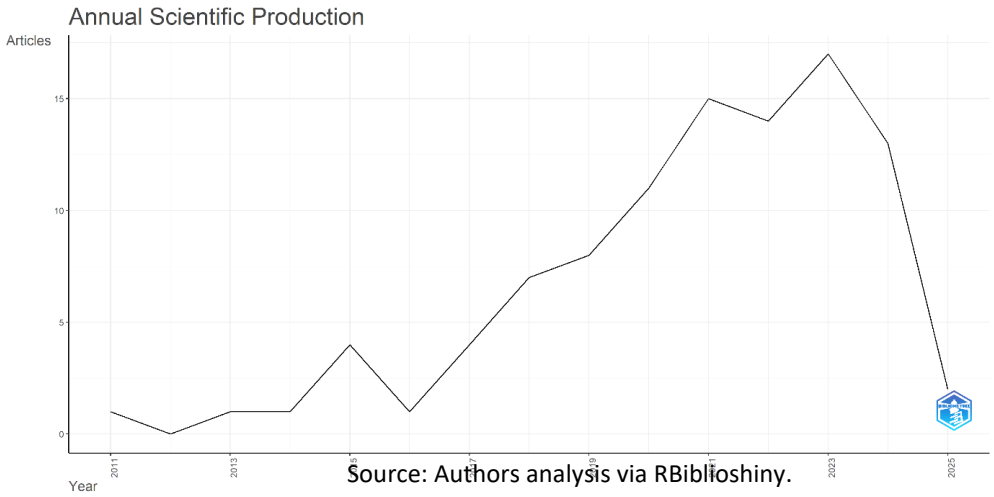
In terms of content, the analysis found 46 Keywords Plus (ID) and 305 Author's Keywords (DE), reflecting the breadth of topics explored. In terms of authors, there were 230 unique authors, of which only 19 authors produced single-authored articles. The number of documents authored by a single author was 20, indicating that the majority of research was conducted collaboratively. This is reinforced by an average of 2.52 authors per article and a percentage of international

collaboration of 21.21%, indicating the existence of a fairly active global research network although there is still room for improvement. The total documents analyzed were 99 journal articles.

Table 1. Annual scientific growth of pilgrimage environments and average citations

Description	**Results**
Main Information About Data	
Timespan	2011:2025
Sources	64
Documents	99
Annual Growth Rate %	5.08
Document Average Age	4.23
Average citations per document	19.95
References	624
Document Contents	
Keywords Plus (ID)	46
Author's Keywords (DE)	305
Authors	
Authors	230
Authors of single-authored docs	19
Authors Collaboration	
Single-authored docs	20
Co-Authors per Doc	2.52
International co-authorships %	21.21
Document Types	
article	99

Source: Author's analysis vi RBiblioshiny



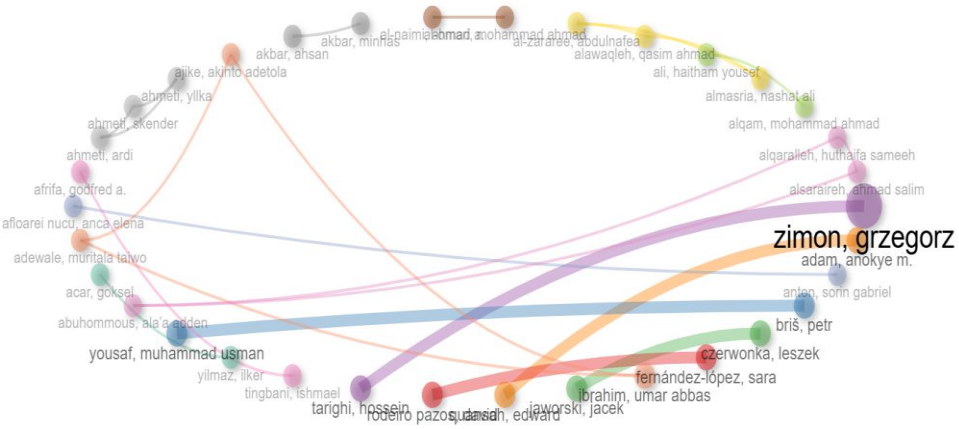
Source: Authors analysis via RBiblioshiny.

Figure 2. Authors analysis via RBiblioshiny

Based on the Annual Scientific Production graph, it can be seen that the number of scientific publications experienced fluctuating development from 2011 to 2025. In the initial period of 2011–2014, the number of articles was still very low and relatively stagnant with only 0–2 publications per year. 2015 showed a slight increase to around 4 articles, although it decreased again in 2016. Entering 2017–2019, the publication trend began to show stable growth from 6 articles to around 8 articles. A significant spike occurred in 2020–2021 with 11 to 15 articles, and the peak was recorded in 2023 with the highest number of publications of around 17 articles. However, in 2024–2025 there was a fairly sharp decline, from 13 articles in 2024 to only 1 article in 2025. This decline was most likely due to the fact that the 2025 data had not yet been fully collected, so the downward trend could not yet be interpreted as a weakening of research interest.

4.2 Author Analysis

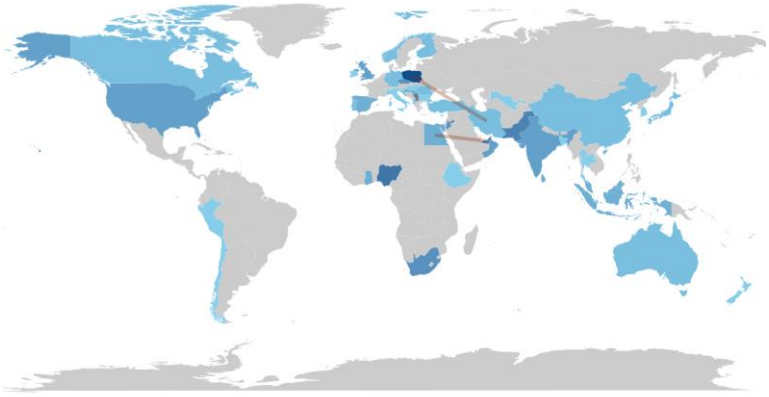
Figure 3. Collaboration Network



Source: Authors analysis via RBiblioshiny

The figure displays a visualization of the collaborative network of authors in research on working capital management. Each circle represents an author, while connecting lines indicate collaboration in publications. The size of the circles indicates the level of productivity or number of publications, while the thickness of the lines indicates the intensity of collaboration. It can be seen that(Zimon, 2020), emerged as the most dominant and productive author with a much larger node size compared to other authors, and has a wide collaboration network with various authors such as(Adam & Quansah, 2019), (Rey-Ares et al., 2021)And(Yousaf & Briš, 2021). Other writers such as(Yousaf & Briš, 2021), Muhammad Usman and(Zimon & Tarighi, 2021)Hossein also holds a prominent position, albeit on a smaller scale, demonstrating significant contributions within their respective clusters. This pattern indicates that WCM research is concentrated among a few key authors who are the driving force, while most other authors remain within limited clusters with narrower collaborations.

Figure 4. Collaboration Network



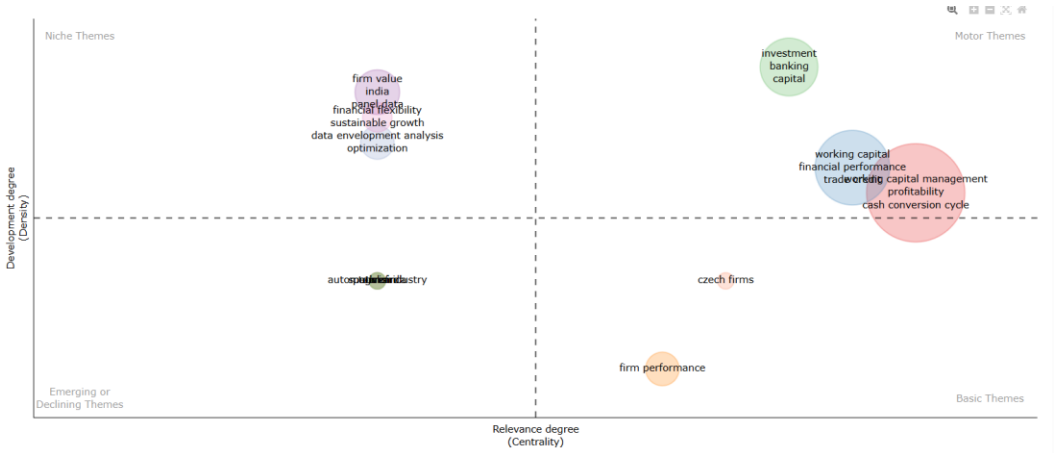
This figure shows a distribution map of international publications related to the topic of working capital management. Countries shown in blue indicate the level of contribution to publications, with darker shades of blue indicating a higher number of publications. It can be seen that the largest research contributions come from Eastern Europe (Poland, Hungary, etc.) and South Asia (India, Pakistan, and surrounding areas). Several other countries, such as the United States, the United Kingdom, China, and Australia, also appear to be actively contributing. Meanwhile, contributions from Africa and Latin America are relatively limited, appearing only in a few countries, such as Nigeria, South Africa, and Brazil. This map indicates that research on working capital management remains concentrated in certain countries, primarily in Europe and Asia, with less involvement from developing countries in Africa and parts of Latin America.

4.3 Document Analysis

Figure 5
Author's Keyword Analysis

This image is a word cloud visualization of the most frequently appearing keywords in research on working capital management. Keywords such as "profitability," "cash conversion cycle," and "financial performance" indicate that the primary focus of the WCM literature is on the relationship between efficient working capital management and a company's profitability and financial performance. Other keywords such as return on assets, liquidity, trade credit, SMEs, firm performance, and investment demonstrate research areas interrelated with the main topic. Furthermore, new themes such as supply chain management, sustainable growth, financial sustainability, and the impact of the COVID-19 pandemic have emerged, indicating an expansion of research toward corporate sustainability and resilience. Thus, this keyword map confirms that the WCM literature remains focused on the profitability and CCC dimensions, but is shifting toward broader strategic studies, including the role of MSMEs, the global crisis, and financial sustainability.

Figure 6. Thematic Map



Source: Authors analysis via RBiblioshiny

Based on the thematic map resulting from the bibliometric analysis, working capital management research themes are divided into four main quadrants. The motor themes quadrant shows topics such as investment, banking, and capital, which serve as the main drivers and are increasingly developing in the literature. The basic themes quadrant displays the most central fundamental concepts such as working capital, financial performance, trade credit, capital management, profitability, and the cash conversion cycle, confirming that the primary focus of WCM research remains on working capital efficiency and its impact on financial performance. On the other hand, the niche themes quadrant covers emerging but more specific topics such as firm value, sustainable growth, financial sustainability, optimization, and geographic contexts such as India. Meanwhile, the emerging or declining themes quadrant presents the automotive industry theme, indicating that WCM studies in the automotive sector are still relatively limited or beginning to decline. Overall, this map confirms that WCM continues to evolve, with a solid foundation of classic themes, while also opening up space for research developments in sustainability, banking, and specific sectoral contexts.

5. Conclusion

This bibliometric study shows that research on working capital management (WCM) is growing rapidly, with a primary focus on the relationship between working capital efficiency, the cash conversion cycle (CCC), and corporate profitability. Global scholarly output is dominated by authors and institutions from Europe and Asia, with a significant increase in international collaboration. Thematic mapping reveals a shift in research toward investment, banking, sustainability, and digitalization, while some sectoral topics are still in their early stages of development. The WCM literature is generally well-established, but offers numerous research opportunities, particularly in areas related to MSMEs, emerging markets, and the integration of strategic perspectives and managerial behavior. Leading companies have accelerated cash flow and liquidity by leveraging generative artificial intelligence, digital financial tools, and strategic collaboration with suppliers. This demonstrates the expansion of WCM research from the traditional focus on cash conversion and efficiency to predictive analytics, ESG-based financing, and resilience planning. Overall, this analysis confirms the growth and diversification of WCM research globally, accompanied by the emergence of new methods and themes, as well as the need for further research linking WCM to strategic, entrepreneurial, and behavioral factors in the context of developing economies and MSMEs.

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