

# Working capital management and profitability: a bibliometric analysis and trend identification

*Gestión del capital circulante y la rentabilidad: un análisis bibliométrico e identificación de tendencias*

*Gestão do capital de giro e rentabilidade: uma análise bibliométrica e identificação de tendências*

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## Abstract

*Introduction:* Effective management of working capital and profitability is a critical area of study, as it forms the foundation of a company's operational activities. Therefore, evaluating financial decision-making within organizations is essential. This research project, conducted during 2023–2024, was supported by **Universidad Libre, Cúcuta**, and the **University of Pamplona** in Colombia.

*Objective:* To analyze the scientific literature that explores the relationship between working capital management and profitability.

*Methodology:* This study adopts a **quantitative approach** using **bibliometric analysis**. A comprehensive review of existing literature in the **Scopus** database was conducted, followed by data analysis using **Bibliometrix** and **VOSviewer**. A total of **501 articles** were examined.

*Results:* The findings reveal that **India** has contributed the highest number of research studies on this topic in recent years. **Martinez-Solano P.** is the most frequently cited author, while **Lappeenranta University of Technology** has led the most research in this domain. The correlation analysis identified five key thematic clusters, with a strong focus on **profitability, working capital**, and the **cash conversion cycle**.

*Conclusions:* The evolution of research in this field has primarily centered on two critical aspects: **the cash conversion cycle** and **capital management strategies**.

*Originality:* This article is an original work by the authors and has not been published or submitted for review in any other print or digital medium.

*Limitations:* Expanding the study's time frame and incorporating additional databases could enhance the research scope and depth.

**Keywords:** Working capital management, profitability, liquidity, cash conversion cycle, bibliometrics.

## Resumen

*Introducción:* la relación entre la gestión del capital de trabajo y la rentabilidad ha despertado gran interés en la comunidad académica y empresarial. En ese sentido, resulta pertinente conocer qué tanto ha abordado la literatura actual sobre el tema, a fin de identificar tendencias y aportes que puedan contribuir de manera significativa a estas comunidades.

*Objetivo:* conocer la producción de artículos científicos cuyo objeto de investigación sea la relación entre la gestión del capital de trabajo y la rentabilidad.

*Método:* la investigación cuenta con un enfoque de tipo cuantitativo, empleando el análisis bibliométrico. Con base en la revisión de la literatura existente en la base de datos referencial Scopus, se procedió al análisis de datos, mediante la implementación de herramientas bibliométricas, tales como Bibliometrix y VOSviewer.

*Resultado:* India es el país con mayor número de investigaciones en los últimos años. Martinez-Solano P. ha sido el autor más citado en la materia. Lappeenranta University of Technology ha sido la institución que más investigaciones ha liderado frente al tema. El análisis de correlación agrupó los términos clave en 5 grupos, liderados por aspectos como la rentabilidad, el capital de trabajo y el ciclo de conversión del efectivo.

*Conclusiones:* la evolución temática se ha enfocado en dos principales aspectos: el ciclo de conversión del efectivo y las estrategias de gestión del capital. En este sentido, se identificó que la relación entre la gestión del capital de trabajo y la rentabilidad es de tipo negativa, y las prácticas se han enfocado en variables como las existencias, las cuentas por cobrar y las cuentas por pagar, lo que constituye un precedente para la comunidad académica y empresarial.

*Originalidad:* El artículo es un trabajo original de nuestra autoría, no ha sido publicado en ningún otro medio impreso o digital, ni está sujeto a ninguna otra revisión en ninguna otra revista.

*Limitaciones:* El periodo temporal del estudio puede ampliarse y el uso de otras bases de datos complementa la investigación.

**Palabras clave:** gestión del circulante, rentabilidad, liquidez, ciclo de transformación en tesorería, bibliometría.

## Resumo

*Introdução:* A relação entre gestão do capital de giro e rentabilidade tem despertado grande interesse nas comunidades acadêmica e empresarial. Portanto, é importante compreender em que medida a literatura atual aborda esse tema, a fim de identificar tendências e contribuições que possam contribuir significativamente para essas comunidades.

*Objetivo:* Determinar a produção de artigos científicos cujo objeto de pesquisa seja a relação entre gestão do capital de giro e rentabilidade.

*Método:* A pesquisa utiliza uma abordagem quantitativa, empregando análise bibliométrica. Com base na revisão da literatura existente na base de dados de referência Scopus, a análise dos dados foi realizada utilizando ferramentas bibliométricas como Bibliometrix e VOSviewer.

*Resultado:* A Índia é o país com o maior número de artigos científicos nos últimos anos. Martinez-Solano P. tem sido o autor mais citado sobre o assunto. A Universidade Tecnológica de Lappeenranta tem sido a instituição que mais liderou as pesquisas sobre o tema. A análise de correlação agrupou os termos-chave em cinco grupos, liderados por aspectos como rentabilidade, capital de giro e ciclo de conversão de caixa. Conclusões: A evolução temática concentrou-se em dois aspectos principais: o ciclo de conversão de caixa e as estratégias de gestão de capital. Nesse sentido, identificou-se que a relação entre gestão de capital de giro e rentabilidade é negativa, e as práticas têm se concentrado em variáveis como estoques, contas a receber e contas a pagar, estabelecendo um precedente para a comunidade acadêmica e empresarial.

*Originalidade:* Este artigo é nosso trabalho original; não foi publicado em nenhuma outra mídia impressa ou digital, nem está sujeito à revisão por pares em nenhum outro periódico.

*Limitações:* O período do estudo pode ser estendido, e a utilização de outras bases de dados complementa a pesquisa.

**Palavras-chave:** gestão de capital de giro, rentabilidade, liquidez, ciclo de conversão de caixa, bibliometria.

# 1. INTRODUCTION

The management of working capital and its relationship with profitability is a topic of great interest to both the academic and business communities. It has emerged as a key strategy for mitigating the potential consequences of poor financial resource management. However, financial studies have traditionally prioritized long-term balance sheet items over short-term operational decisions. In recent years, interest in analyzing accounts related to **operational decision-making** has grown significantly [1]. This shift is driven by the fact that many companies rely heavily on short-term

financial resources, which directly impact profitability. Therefore, **effective working capital management is essential to ensuring long-term sustainability**.

Efficient financial resource management is a **fundamental pillar** for business success [2]-[5], as it underpins all operational activities. Continuous monitoring and evaluation of financial decision-making processes are crucial. **Panda et al.** [6] emphasize that analyzing the relevance of **working capital management** [7], [8] also requires examining its key components: **accounts receivable, accounts payable, and inventory management**. These factors can positively or negatively influence **company performance, productivity, efficiency**, and, ultimately, **profitability** [9]. According to **Muyma and Rojas** [10], effective working capital management depends on ensuring **sufficient cash flow, optimal allocation of resources**, and the ability to balance profitability with liquidity. A failure to maintain profitability can lead to liquidity challenges in the medium and long term [11]-[13].

Given these considerations, this study explores the **scientific production** on the relationship between **working capital management and profitability**. Despite the growing importance of this topic, there remains a **notable gap in the literature, particularly at the national level**. The study aims to identify **key thematic trends** that can serve two primary audiences:

1. **The academic community**, by providing insights into the most researched topics and laying a foundation for future studies.
2. **The business sector**, by offering valuable knowledge on industry trends, which can inform better decision-making.

To achieve these objectives, this research begins with a **comprehensive literature review** on **working capital management and profitability**, identifying the key insights that scholars have contributed to the field. Understanding past research is essential for highlighting **major findings** and setting the stage for future studies.

With the increasing relevance of this topic, this article employs **bibliometric analysis** as a research tool. Bibliometrics offers a **retrospective and current** perspective on the state of knowledge in a given field, while also providing insights to **anticipate and project future developments** [14]. The findings of this research will be beneficial to both the **academic and business communities**, fostering responsible financial decision-making that contributes to long-term **economic growth and sustainability** [15].

As a key reference, this study considers the work of **Nobanee and Dilshad** [16], who analyzed existing research on **working capital management** published between

**1954 and 2020** using bibliometric methods and tools such as **VOSviewer**. Their findings highlight the **progress made in this field** and offer guidance for financial professionals.

Additionally, studies by **Ormaza and Guerrero** [17], **Hasper et al.** [18], and **Villegas, Walle, and Álvarez** [19] demonstrate the effectiveness of bibliometric analysis in identifying trends across different business domains. Their research examined topics such as **business quality and growth, risk management**, and the **use of information technologies in financial decision-making**. Similar to profitability and working capital, these factors play a crucial role in **business performance and management strategies**.

This article is structured as follows:

- **Section 2** provides an in-depth discussion of the information sources on **working capital management and profitability**.
- **Section 3** outlines the methodology, detailing the software tools used for bibliometric analysis.
- **Section 4** presents the research findings, including the evolution of this topic from **1974 to 2023**.
- **Section 5** discusses the results and concludes with key takeaways.

## 2. MATERIALS AND METHODS

The articles used in this study were sourced from **Elsevier's Scopus**, a database widely recognized by the academic community for its **high-quality standards**. Scopus provides a **comprehensive overview** of global research output and is frequently used to analyze **trends across various fields of study**. Additionally, it is one of the most **robust and diverse** databases, compiling scientific publications from **Europe, Latin America, and the Asia-Pacific region** [20].

To identify relevant articles on **working capital management and profitability**, the search was conducted using the following keyword combination: **"Working AND Capital AND Management AND Profitability,"** applied to **titles, abstracts, and keywords**. This approach ensures that the selected studies focus on the relationship between **working capital and profitability** by incorporating both variables into the search criteria.

This study employs a **quantitative bibliometric approach** to track the evolution of research on the subject. The search process was conducted between **January and February 2024**, with a **cutoff year of 2023**, to capture all stages of the topic's

development. Based on these criteria, a **sample of 501 documents** was obtained, with the earliest publication dating back to **1974** and the most recent in **2023**.

The **bibliometric methodology** has proven highly effective in assessing **academic research impact** [21], identifying **emerging trends** [22], and detecting **research gaps** in the literature [23]. The analysis was conducted using two key techniques:

1. **Performance analysis**, which evaluates the impact and productivity of research.
2. **Scientific mapping**, which explores the **intellectual structure** of the field.

To conduct this analysis, the study utilized **Bibliometrix**, an **R Studio** package known for its **high data compatibility** and advanced analytical functions, such as **trend analysis and factor analysis**.

Furthermore, the research was enhanced with **VOSviewer**, a widely used bibliometric tool for mapping scientific knowledge. This software enables **co-citation and cluster analysis**, helping to identify **highly cited documents** and visualize **knowledge networks** within the field. The methodological approach employed in this study has been successfully applied in previous financial research studies, yielding **valuable insights** [24]-[35].

### 3. RESULTS

From the **Scopus database**, a total of **501 publications** related to **working capital management and profitability** were identified, covering research from **1974 to 2023**. The key findings derived from the **bibliometric analysis** are summarized below.

#### Journals with the Highest Number of Publications

The **Scopus database** lists **342 journals** that have published research on **working capital management and profitability**. **Table 1** presents the **top 10 journals** with the highest number of publications in this field. Among them, the **Global Business Review**, **International Journal of Managerial Finance**, and **Investment Management and Financial Innovations** are the most prominent, each contributing **eight publications**. Collectively, these three journals account for **slightly more than 2%** of the total research output in this domain.

**Table 1. Journals with the highest number of publications. Magazine**

<b>Magazine</b>	<b>Number of publications</b>
Global Business Review	8
International Journal of Managerial Finance	8
Investment Management and Financial Innovations	8
International Research Journal of Finance and Economics	7
European Journal of Operational Research	6
Asian Economic and Financial Review	5
International Journal of Economics and Business Research	5
International Journal of Financial Research	5
Journal of Advanced Research in Dynamical and control systems	5
Lecture Notes in Networks and Systems	5

**Source:** own work, based on Bibliometrix (2024).

With respect to the most cited....

<b>Document</b>	<b>Number of citations</b>
Deloof M., 2003, J Bus Financ Account	706
García-Teruel PJ, 2007, Int J Manage Finan.	429
Lerner M., 1997 J Bus Venturing	293
Kouvelis P., 2016, Manage Sci.	231
Lee Ch., 2011, Eur J Oper Res.	207
Baños-Caballero S., 2012, Small Bus Econ.	204
Arsel M., 2012, Dev Change	201
Sadeghbeigi R., 2012, Fluid Catal Cracking Handb.	190
Enqvist J, 2014, Res Int Bus Financ.	188
Jose ML., 1996, J Econ Finan	171

## Most productive authors

Of the 1,060 authors that make up the sample of results obtained, Timo Kärri is the author with the highest number of publications on the subject of working capital management and profitability, with a total of 8 publications, according to Table 3; followed by Haitham Nobanee and Pirttilä, with 5 publications each.

Therefore, following the classification of authors, there are no large producers, since no author has published more than ten articles; one author is at the level of medium producers with 8 articles and all the others are small producers.

**Table 3. Most productive authors**

Author	Number of publications
Kärri T.	8
Nobanee H.	5
Pirttilä M.	5
Kumar S.	4
Talampoika A-M.	4
Almaqţari FA.	3
Bagchi B.	3
Bonazzi G.	3
Brodetskiy GL.	3
Chadha S.	3

**Source:** own work, based on Bibliometrix (2024).

## More productive institutions

The analysis of institutional research output revealed that Lappeenranta University of Technology in Finland leads the ranking, with a total of 24 published research papers on working capital management and profitability. Based on this criterion, it is the most productive institution in the field.

Following closely, the Indian Institute of Management Ranchi in India ranks second, with 11 published research papers (see Table 4).

**Table 4. Most productive institutions**

Author	Number of publications
Lappeenranta University of Technology	24
Indian Institute of Management Ranchi	11
Birla Institute of Technology and Science	7
Bina Nusantara University	6
Czech University of Life Sciences	6
Malaviya National Institute of Technology	6
University of Santiago de Compostela	6
Universiti Putra Malaysia	6
Abu Dhabi University	5
Dhofar University	5

**Source:** own work, based on Bibliometrix (2024).

## Thematic evolution of publications

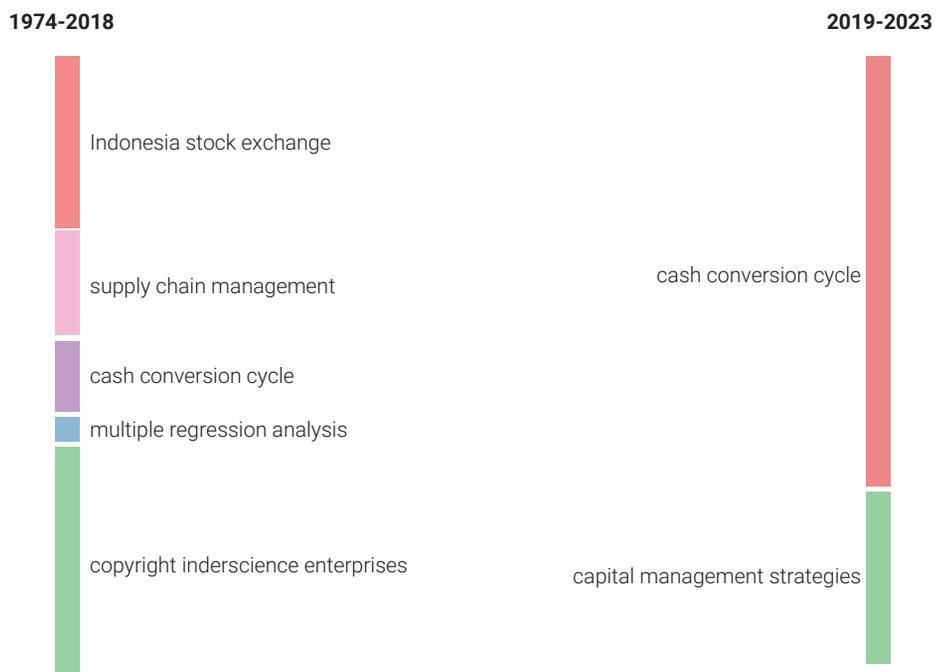
The analysis of thematic evolution was conducted by dividing the publications into two distinct time periods, as illustrated in Figure 1:

1974–2018: This period was characterized by research trends primarily focused on the stock market in Indonesia. Similar findings were reported by Cuadrado Sánchez et al. [37], who analyzed topics such as supply chain management and multiple regression analysis, among others.

2019–2023: In the past five years, the field has entered an exponential growth phase, with a notable increase in research interest. The focus has shifted toward two dominant themes:

Cash conversion cycle  
Capital management strategies

These emerging trends now define and shape the study of working capital management and its relationship with profitability.



**Figure 1.** Thematic evolution of publications.

Source: own work, based on Vosviewer,(2024).

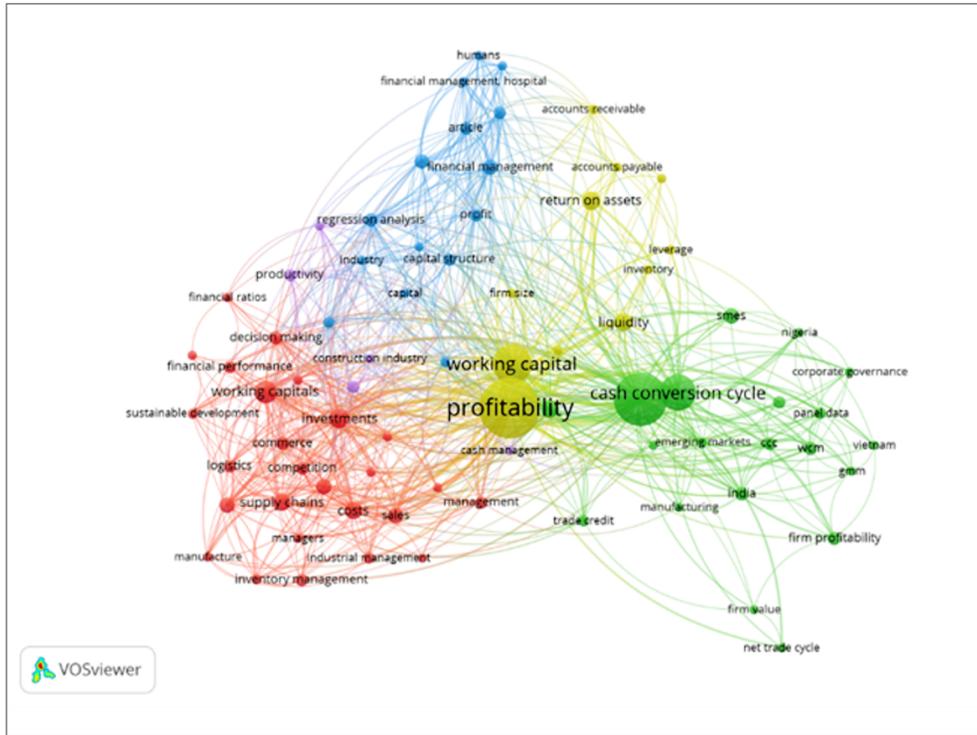
## Cooccurrence of keywords

The co-occurrence analysis identifies relationships between elements based on the number of documents in which they appear together. The larger the node and the closer it is to the center, the stronger the relationship of that element with others. As shown in Figure 2, the main central node is Profitability, followed by Working Capital, Cash Conversion Cycle, and Financial Management.

In addition, this co-occurrence analysis was used to perform a cluster analysis based on key terms or keywords. As depicted in Figure 2, the software identified five clusters, each represented by a different color:

1. Red Cluster (Largest, 11 terms): This cluster focuses on the relationship between working capital management and efficient financial administration, emphasizing strategies and policies aimed at maximizing profitability through the appropriate use of working capital resources [38].
2. Green Cluster: This cluster revolves around the cash conversion cycle, specifically in industries, with a focus on assessing its impact on profitability.
3. Blue Cluster: Focuses on financial management, particularly the analysis of capital structure and regression analysis.
4. Yellow Cluster: This cluster is centered around liquidity management and its influence on financial performance and profitability.
5. Purple Cluster: Deals with the impact of corporate governance and financial policies on the management of working capital and long-term profitability.

These clusters represent the primary research themes in the field of working capital management and profitability, reflecting the key areas of interest in recent publications.

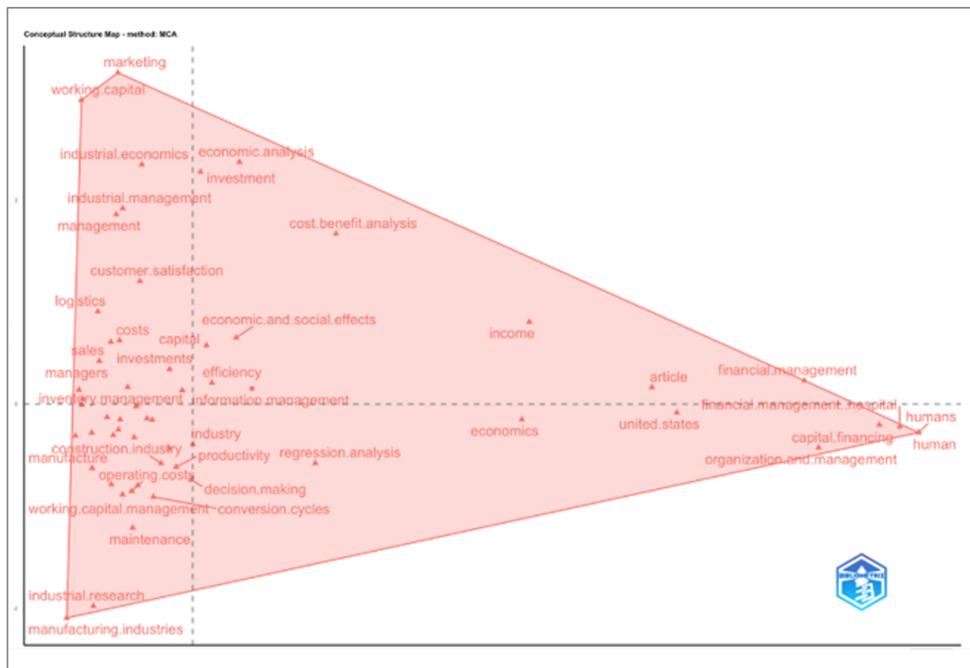


**Figure 2.** Thematic evolution of publications  
**Source:** own work, based on Vosviewer,(2024)

## Factor analysis of keywords

In this analysis, the categories are grouped into a single figure, where they are arranged by location. These categories are represented by triangular points, and the goal is to decompose both the common and specific factors [40]. The analysis was conducted using the multiple correspondence technique, which helps to study the associations between two categories, based on the keywords used in the articles.

As shown in Figure 3, the red region reveals certain associations. The closer the words are to each other, the stronger the relationship, and their proximity to the point of intersection further suggests this connection. From this, it can be inferred that the strongest relationships exist between information management and inventory management. This suggests that researchers are focused on finding ways to achieve efficient management of scarce resources available to organizations.



**Figure 3.** Factor analysis of the keywords.  
**Source:** own work, based on Bibliometrix, (2024).

## 4. DISCUSSION AND CONCLUSIONS

Ahmeti et al. [41] identified that small and medium-sized companies (SMEs) tend to increase their profitability as they extend their credit collection periods and cash conversion cycles. This finding aligns with the thematic evolution of the publications, where the management of the cash conversion cycle has been a central focus. This term is particularly significant when analyzing the co-occurrence of keywords in the literature.

Farhan, Mosab, Faozi, and Amgad [42] explored the interrelationships between working capital management (WCM) and the profitability of pharmaceutical companies in India. Their findings revealed a negative and significant impact between key WCM variables—such as deferment period, collection period, inventory holding, and operating cycle—on profitability. In line with these findings, Sawarni, Narayanasamy, and Ayyalusamy [43] also argue that efficient working capital management significantly impacts the performance of companies, specifically in their study of 414 companies listed on the Bombay Stock Exchange, India.

On the contrary, Farhan, Almaqtari, Al-Homaidi, and Tabash [44] examined the cash conversion cycle's influence on the performance of Indian pharmaceutical companies and found it to have a negative effect on profitability.

In a different context, Panda, Nanda, and Panda [45] studied the relationship between working capital management and profitability in Indian small and medium enterprises (SMEs). They concluded that SME managers could enhance profitability by quickly converting credit sales to cash, increasing accounts payable days, and adopting a conservative inventory management strategy.

Other studies, such as Seth et al. [46], identified key variables affecting the efficiency of working capital management in the Indian manufacturing sector. Variables like net fixed asset ratio, asset turnover ratio, profitability, and leverage were found to significantly influence working capital management efficiency. Moreover, the study found that working capital investment and financing policies have the strongest effect on profitability [47].

These findings emphasize the thematic evolution of capital management strategies, particularly the management of working capital. Efficient practices in this regard include deferring accounts payable, reducing accounts receivable maturities, and effective inventory control. For instance, Bhatia and Srivastava [48] concluded that there is a negative relationship between working capital management and firm performance, highlighting the need for effective management to improve profitability.

Furthermore, Bagchi et al. found a negative relationship between working capital measures and profitability in Indian FMCG companies, supporting the broader consensus that the relationship between working capital management and profitability is negative and non-linear. Other studies suggest that the bibliometric context can be further expanded by considering additional variables [49], [50], [51].

## Conclusions

In recent years, there has been a growing interest among researchers in the relationship between working capital management and profitability, particularly in Asian countries like India and China. The findings indicate that the trend is driven by effective working capital management practices and the cash conversion cycle, which are closely linked to other financial variables such as current assets, inventories, accounts receivable, and accounts payable. These variables, in turn, play a crucial role in liquidity and profitability. Moreover, it is evident that the relationship between working capital management and profitability is negative, meaning that an increase in one of these factors leads to a significant reduction in the other.

In this context, the present research makes a valuable contribution to both the scientific and business communities by providing insights for business decision-making. The findings can serve as a reference for companies seeking greater clarity on the financial variables that require closer attention and management. The study also establishes a precedent for future research, particularly on the behavior of these variables in companies from other emerging economies, such as those in Latin America.

Furthermore, future studies could explore the impact of other variables on company profitability, as most of the existing evidence focuses on Indian companies, particularly those in the pharmaceutical and manufacturing sectors. Expanding the scope of research to include a broader range of industries and regions could offer a more comprehensive understanding of how working capital management influences profitability on a global scale.

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