

# **MAPPING THE RESEARCH LANDSCAPE: A BIBLIOMETRIC STUDY OF WORKING CAPITAL MANAGEMENT AND PROFITABILITY**

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## **ABSTRACT**

Working capital Management, considered is a company's ability to deal with short-term liabilities in current assets (inventory, accounts receivable, and net financial resources) from a financial perspective. However, this concept may be thought of in scientific literature as variables costs or the stock of productive capital, among numerous others. Considering the significant role of working capital in a firm's dynamin environment. The main goal of this study is to identify the major exclusions and insights from the literature on working capital, as well as to make suggestions for future research. The issue of "working capital and its impact on firm's profitability " was the subject of a bibliometric analysis using bibliographic data from Scopus for the year 2008- 2023. These data were initially processed using bibliometric methods, taking into account the VOSviewer and were then analyzed using a literature review. Employing data from the Scopus database, this bibliographic study assesses the current state of the research on working capital management (WCM) and how it relates to profitability throughout a 15-year duration (2008–2023). Using VOSviewer as an exhaustive review of 513 documents was carried performed to pinpoint important themes, prominent papers, prolific authors, and major trends in the field of WCM. Through the study, buzzwords like "profitability," "inventory management," and "cash conversion cycle" are used to illustrate the importance of WCM in improving business profitability and operational efficiency. Comprehensive networks of working together among researchers and institutions are revealed by co-authorship and co-occurrence analyses, emphasizing the multidisciplinary and global reach of WCM research. Geographic analysis indicates which regions are most important to the field, namely Asia and Europe. Although some drawbacks, like the study's dependence upon a single database, it offers a useful starting point for future research into novel WCM methods, the effects of digital transformation, and the function of WCM in sustainable company operations. The results underscore how critical successful WCM tactics are to achieving operational success and profitability, providing guidance for both academic researchers and entrepreneurs.

**Keywords:** Working capital management, Profitability, Bibliometric analysis, Scopus, VOSviewer

## **I. INTRODUCTION**

Working capital management is crucial for a company's value, profitability, and risk [1]. Working capital is considered to be the outcome of the delay between the cost of buying raw materials and the revenue from selling the finished product. Working capital management embraces can have a big impact on a company's liquidity and profitability [2]. Working capital management involves the Planning and managing current assets and current liabilities in a way that eliminates the danger of being unable able to satisfy short-term commitments on the one hand, and avoids an excessive investment in these assets on the other [3].

If we neglect to take care of our liquidity, we can run into insolvency issues. Due to these factors, working capital management should be carefully considered since it will eventually impact the firm's profitability [4]. There are various aspects of the working capital concept that are connected to a company's profitability and financial performance. It tends to be viewed from a financial viewpoint in the literature, but it can also have other meanings, such as productive capital stock or operating expenses. In any event, there is much opportunity for research in the sectors relating to working capital [5].

In the literature on corporate finance, working capital management is given significant importance. Working capital can significantly affect a firm's productivity and profitability, according to historical research. This suggests that working capital management is crucial for ensuring the company has sufficient cash flows to cover its current commitments, which take the shape of expenses and short-term debts [6]. According to [7], financial managers concentrate the majority of their time and energy figuring out where present assets and liabilities aren't at their optimal levels and raising them. A working capital level that balances efficiency and risk is ideal. It requires regular oversight to keep the ideal level of the many working capital components, such as cash receivables, inventories, and payables [8].

The main objective of this research, taking into consideration the aforementioned background, is to highlight the key findings gained from scientific literature regarding "working capital" and profitability dimensions, highlighting gaps and offering suggestions for future research directions. However, a search on the database of Scopus in December, 2023, revealed that there were only a small number of studies using the bibliometric approach to discuss working capital [6], [9], highlighting the relevance of this particular research. Research reveals that there is still much to be done in these fields of study [10].

The research question of the study are as follows:

RQ 1. What is the importance of bibliometric analysis in defining the theoretical frameworks for the working capital management?

RQ2. What structure is formed by the publications and citations in the working capital management?

RQ3. Which keywords do authors on the working capital management use the most frequently?

RQ5. Which research documents are cited the most frequently by authors in the field of quality of working capital management?

RQ6. What are the most Prolific Journal concerning the production of research papers in working capital management?

RQ7. What are the Top leading countries concerning the production of research papers in working capital management?

This research paper has objective to determine the bibliometric analysis and also its process, this will help to the researchers in drawing the correct direction. This study includes various search like keywords frequency, the most cited document in the field, sources title, countries, etc.

### **Objectives of the study**

i.To study the database of Scopus for the main item (subject areas and countries) and trends (2008-2023).

ii.Which of the scientific literature's major gaps are there?

iii.To study a review of the existing literature available on working capital, working capital management and its impact on profitability.

## **II.MATERIAL AND METHODS**

Bibliometric analysis is a tool for extracting academic content (articles, books, book chapters, conference proceedings, and reports) from reputable databases like Google Scholar, Web of Sciences, Scopus, Emerald, and Elsevier. A Bibliometric technique for emphasizing the key findings from the enormous amount of academic research created each year by researchers from different nations throughout the world [11]. According to a Scopus database (2020) search, academics have been more interested in bibliometric methodologies in recent years.

The available data on Scopus is then organized chronologically and examined to develop future plans for the research topic. The fundamental statistics gathered from the Scopus database are constrained to the period from 2008 to 2023 because the current study is focused on the Bibliometric analysis: A Bibliometric analysis of working capital management and its impact on profitability of companies. Due to the constrained access to other databases, the study concentrated on the data of the Scopus database.

In view of the objectives planned for this research, for a search performed on (30 Dec. 2023), 513 documents were obtained from Scopus (2008-2023) for the topic "working capital and its impact on profitability of the companies". Then examined through a literature study for the subjects that were highlighted using the bibliometric technique as being more pertinent.

### III. RESULT ANALYSIS

Data collected from Scopus for the working capital management and profitability using VOSviewer, the bibliometric analysis result were presented with their interpretation.

#### 3.1 Bibliometric & Network analysis

For the study purpose, Scopus database, was used from 2008 to 2023. Keywords were used in this search process were "Working capital management" OR

"Cash Management" OR "Inventory management" OR "Accounts receivable management" OR "Accounts payable management" OR "Cash conversion cycle" OR "Trade credit" OR "liquidity Management" AND "Profitability" showed 525 document results. This search was limited to document types of review papers and articles, English language, Business Management and Accounting, Economic, Econometric and Financing (subject area), and the final number of papers included in the analysis is 513 documents.

#### 3.2 Most Cited Papers in the Working Capital Management

Table 1: List of Papers citation with more than 50 citation

Authors	Title of the paper	Year	T C
Kouvelis P.; Zhao W. [12]	Supply chain contract design under financial constraints and bankruptcy costs	2016	230
Baños-Caballero S.; García-Teruel P.J.; Martínez-Solano P.[13]	How does working capital management affect the profitability of Spanish SMEs?	2012	200
Enqvist J.; Graham M.; Nikkinen J.[14]	The impact of working capital management on firm profitability in different business cycles: Evidence from Finland	2014	181
Randall W.S.; Farris II M.T.[15]	Supply chain financing: Using cash-to-cash variables to strengthen the supply chain	2009	174
Tiwari S.; Daryanto Y.; Wee H.M. [16]	Sustainable inventory management with deteriorating and imperfect quality items considering carbon emission	2018	172
Zavanella L.; Zanoni S. [17]	A one-vendor multi-buyer integrated production-inventory model: The 'Consignment Stock' case	2009	167
Bougheas S.; Mateut S.; Mizen P. [18]	Corporate trade credit and inventories: New evidence of a trade-off from accounts payable and receivable	2009	153
Sharma A.K.; Kumar S. [19]	Effect of working capital management on firm profitability: Empirical evidence from India	2011	148
Chen S.-C.; Cárdenas-Barrón L.E.; Teng J.-T. [20]	Retailer's economic order quantity when the supplier offers conditionally permissible delay in payments link to order quantity	2014	147
Abuzayed B.[21]	Working capital management and firms' performance in emerging markets: The case of Jordan	2012	134
Lai G.; Debo L.G.; Sycara K. [22]	Buy now and match later: Impact of posterior price matching on profit with strategic consumers	2010	121
Mishra U.; Wu J.-Z.; Sarkar B. [23]	Optimum sustainable inventory management with backorder and deterioration under controllable carbon emissions	2021	115
Chern M.-S.; Pan Q.; Teng J.-T.; Chan Y.-L.; Chen S.-C. [24]	Stackelberg solution in a vendor-buyer supply chain model with permissible delay in payments	2013	112

Pais M.A.; Gama P.M. [25]	Working capital management and SMEs profitability: Portuguese evidence	2015	110
Xiao S.; Sethi S.P.; Liu M.; Ma S [26].	Coordinating contracts for a financially constrained supply chain	2017	108
Martínez-Sola C.; García-Teruel P.J.; Martínez-Solano P. [ 27]	Trade credit and SME profitability	2014	100
Yazdanfar D.; Tahman P. [28]	Debt financing and firm performance: an empirical study based on Swedish data	2015	94
Tauringana V.; Adjapong Afrifa G. [29]	The relative importance of working capital management and its components to SMEs' profitability	2013	94
Mun S.G.; Jang S.S. [30 ]	Working capital, cash holding, and profitability of restaurant firms	2015	92
Ukaegbu B. [31]	The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa	2014	91
Mathuva D.M. [ 32]	The influence of working capital management components on corporate profitability: A survey on Kenyan listed firms	2010	90
Kestens K.; Van Cauwenberge P.; Bauwhede H.V. [ 33]	Trade credit and company performance during the 2008 financial crisis	2012	89
Molina C.A.; Preve L.A. [ 34]	An Empirical Analysis of the Effect of Financial Distress on Trade Credit	2012	85
Dong H.P.; Su J.-T. [35]	The relationship between working capital management and profitability: A Vietnam case	2010	82
Falope O.I.; Ajilore O.T. [36 ]	Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted companies in Nigeria	2009	79
Piramuthu S.; Zhou W. [37 ]	RFID and perishable inventory management with shelf-space and freshness dependent demand	2013	78
Uyar A. [ 38]	The relationship of cash conversion cycle with firm size and profitability: An empirical investigation in Turkey	2009	78
Sepehri A.; Mishra U.; Sarkar B. [ 39]	A sustainable production-inventory model with imperfect quality under preservation technology and quality improvement investment	2021	74
Yazdanfar D.; Tahman P. [28]	The impact of cash conversion cycle on firm profitability: An empirical study based on Swedish data	2014	73
Boisjoly R.P.; Conine T.E., Jr; McDonald M.B., [40 ]	Working capital management: Financial and valuation impacts	2020	72
Raheman A.; Afza T.; Qayyum A.; Bodla M.A. [ 41]	Working capital management and corporate performance of manufacturing sector in Pakistan	2010	72
Liu Z.; Cruz J.M. [42]	Supply chain networks with corporate financial risks and trade credits under economic uncertainty	2012	71
Nobanee H.; Abdullatif M.; Alhajjar M. [43]	Cash conversion cycle and firm's performance of Japanese firms	2011	70

Afrifa G.A.; Padachi K. [44]	Working capital level influence on SME profitability	2016	69
Heydari J.; Rastegar M.; Glock C.H. [45]	A two-level delay in payments contract for supply chain coordination: The case of credit-dependent demand	2017	69
Lyngstadaas H.; Berg T. [46]	Working capital management: evidence from Norway	2016	69
Tiwari S.; Ahmed W.; Sarkar B. [47]	Sustainable ordering policies for non-instantaneous deteriorating items under carbon emission and multi-trade-credit-policies	2019	68
Wu J.; Skouri K.; Teng J.-T.; Ouyang L.-Y. [48]	A note on "optimal replenishment policies for non-instantaneous deteriorating items with price and stock sensitive demand under permissible delay in payment"	2014	67
Eckbo B.E.; Thorburn K.S.; Wang W. [49]	How costly is corporate bankruptcy for the CEO?	2016	65
Stavroulaki E. [50]	Inventory decisions for substitutable products with stock-dependent demand	2011	62
Mayneris F.; Poncet S.; Zhang T. [51]	Improving or disappearing: Firm-level adjustments to minimum wages in China	2018	61
Isaksson O.H.D.; Seifert R.W. [52]	Inventory leanness and the financial performance of firms	2014	58
Tsao Y.-C.; Lee P.-L.; Chen C.-H.; Liao Z.-W. [53]	Sustainable newsvendor models under trade credit	2017	58
Du J.; Zhang J.; Hua G. [54]	Pricing and inventory management in the presence of strategic customers with risk preference and decreasing value	2015	57
Wetzel P.; Hofmann E. [56]	Supply chain finance, financial constraints and corporate performance: An explorative network analysis and future research agenda	2019	56
Cui Q.; Hastak M.; Halpin D. [57]	Systems analysis of project cash flow management strategies	2010	55
Singhanian M.; Mehta P. [58]	Working capital management and firms' profitability: evidence from emerging Asian countries	2017	53
Vural G.; S'kmen A.G.; Etenak E.H. [59]	Affects of working capital management on firms performance: Evidence from Turkey	2012	52
Arcelus F.J.; Kumar S.; Srinivasan G. [60]	Risk tolerance and a retailer's pricing and ordering policies within a newsvendor framework	2012	51
Gosman M.L.; Kohlbeck M.J. [61]	Effects of the existence and identity of major customers on supplier profitability: Is Wal-Mart different?	2009	51

### 3.3 Co-Occurrence Analysis

Table 2 describe the Co-occurrence links and top 30 (occurrences) all keyword items, considering 5 as the minimum number of occurrences of a keyword and 2099 as the number of keywords selected Were obtained by using VOSviewer software for the co-occurrences and items all keywords. The fig. breadth of the circle signifies the number of occurrences and

the vicinity of the relatedness (no. of documents in which they take place together). In Tables occurrences is the number of frequency in which a keyword looks, [61]. Tables 1 and 2 were presented to complement the readability of Figures 7 and 8. In these tables only the top 15 items were presented as a compromise between avoiding presenting too much information and presenting sufficient data to support the analysis, following, for example, [10].

Figures 1 Tables 2 were obtained with the VOSviewer software for the links' co-occurrences and items all keywords and author keywords, respectively. In Figures 2, the dimension of the circle represents the number of occurrences and the proximity of the relatedness (number of documents in which they occur together). In addition, each color represents a cluster. In Tables 1 and 2 occurrences is the number of studies

Table 2: Co-occurrence links and top 30 (occurrences) all keyword items, considering 5 as the minimum number of occurrences of a keyword and 2099 as the number of keywords selected

in which a keyword appears, [61]. Tables 1 and 2 were presented to complement the readability of Figures 2 and 3. In these tables only the top 15 items were presented as a compromise between avoiding presenting too much information and presenting sufficient data to support the analysis, following, for example, [10].

Keyword	Frequency	Total link strength
Profitability	267	1025
Working Capital Management	126	251
Inventory Control	87	516
Inventory Management	83	430
Cash Conversion Cycle	71	158
Sales	69	440
Trade Credit	62	242
Working Capital	52	94
Supply Chains	43	289
Costs	36	242
Commerce	35	241
Supply Chain Management	26	148
Inventory	22	117
Return on Assets	22	52
Sensitivity Analysis	21	168
SMEs	19	41
Optimization	18	103
Decision Making	17	122
Firm Profitability	16	40
Liquidity Management	16	15
Deterioration	15	112
Manufacture	13	94
Panel data	13	34
Liquidity	12	23
Stochastic systems	12	89
Accounts Payable	11	40
Accounts Receivable	11	37
Finance	11	72
Financial Performance	11	27



Table 2 describes the co-authorship network in research domains pertaining to working capital management, sales optimization, and inventory control is mapped by the VOSviewer visualization. The top 30 keywords from 2099 selected keywords are identified which have the minimum 5 frequencies with 102 threshold meet. Key clusters were also focused: the blue cluster focuses on supply chain management and sales (e.g., "sales" with 69 occurrences and 440 link strength), the red cluster on financial results (e.g.,

"profitability" with 267 occurrences and 1025 link strength), and the green cluster focuses on inventory management (e.g., "inventory control" with 87 occurrences and 516 total link strength). Key terms and central authors indicate important partnerships, with profitability serving as a central motif. This network highlights how operational and financial research are intertwined, emphasizing the value of interdisciplinary approaches and strategic alliances for bettering corporate performance.

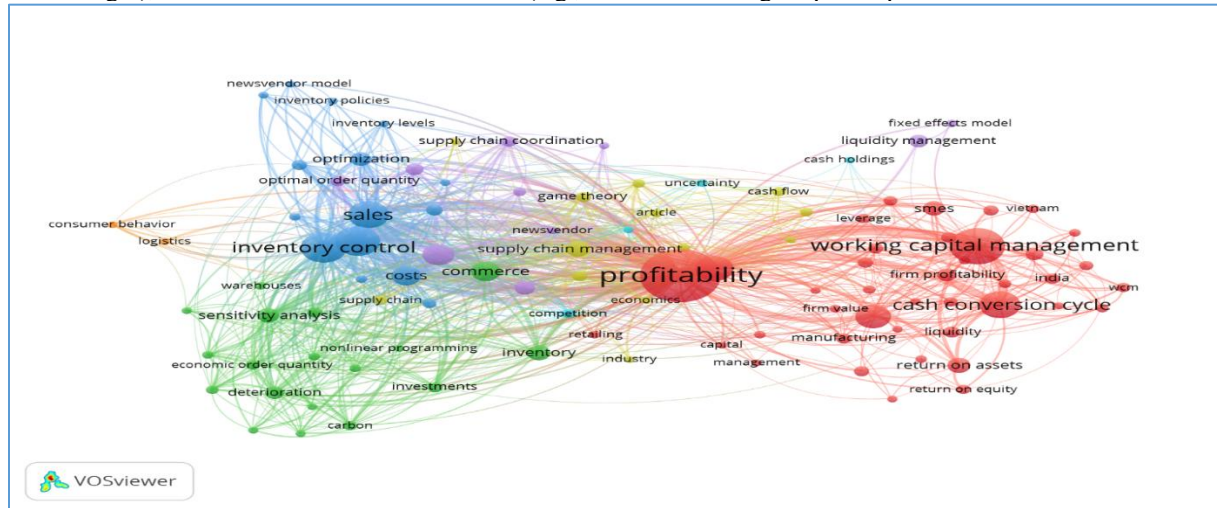


Fig. 1: Author keyword co-occurrence network

### 3.4 Co-Authorship Analysis

The worldwide collaboration network in the study the domain, as mentioned in the research paper, is illustrated visually using the VOSviewer visual representation. The lines connecting the nodes represent cooperative links among nations, while the

nodes themselves represent different nations. The size of each node reflects the amount of research output produced by that nation. Notably, the United States, India, and China emerge as central hubs with numerous links, which highlights their significant roles in international academic collaboration.

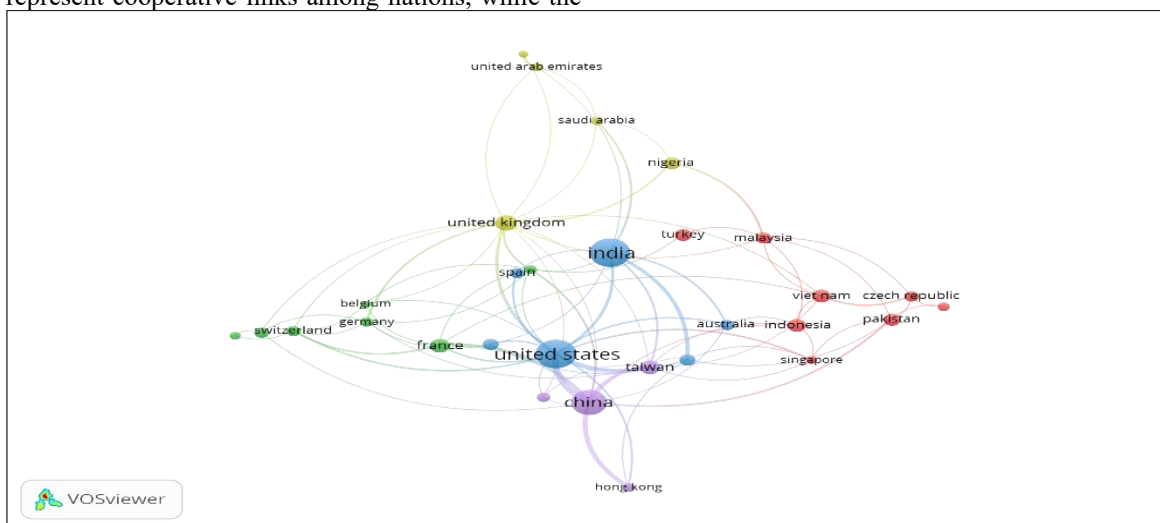


Fig. 2 Co-authorship links and authors items, considering 1 as the minimum number of documents from an author.

The largest node in terms of data is the United States, showing its dominant standing and extensive global collaborations. India, which stands out as a giant blue node, exhibits strong collaborative ties, in particular with the UK, Malaysia, Saudi Arabia, and Australia. China, also a prominent player, appears with strong linkages to Hong Kong, Japan, and the United States. The countries have been divided into discrete, assigned colors groups that indicate theme or regional study clusters. For example, a close-knit cluster comprising European nations, including the UK, Germany, France, Spain, and Belgium, demonstrates significant intra-regional trade. In a similar vein, the grouping of Asian nations such as China, Hong Kong, and Japan symbolizes their regional cooperation. With major nations like the United States and India functioning as crucial hubs in the global research network, this graphic stresses the value of international cooperation in advancing research and knowledge across national boundaries. The paper's conclusions on the dynamics of international research alliances and the role performed by developed nations in promoting scientific progress are consistent with

this representation. The graphic's data aids in measuring and displaying the scope of these collaboration, revealing how interlinked contemporary scientific research is.

### 3.5 Trend year of Publication from 2008 to 2023

Fig shows the annual publication trend from 2008 to 2023. It shows some fluctuations, the overall number of publications rose to 64 by 2023, a significant rise. From 2008 to 2023, there is a discernible increase, with 2023 having the highest amount of publications (64). Still, some years, like 2013, 2018 and 2022, had a decline in publications when compared with the year before. This growth may be the result of increased interest in particular topics, increased investigation activity, or expanding the scope of both professional and academic domains.

Overall, the publication rate pattern throughout the specified years is displayed in this table, illustrating how it evolved and fluctuated over time.

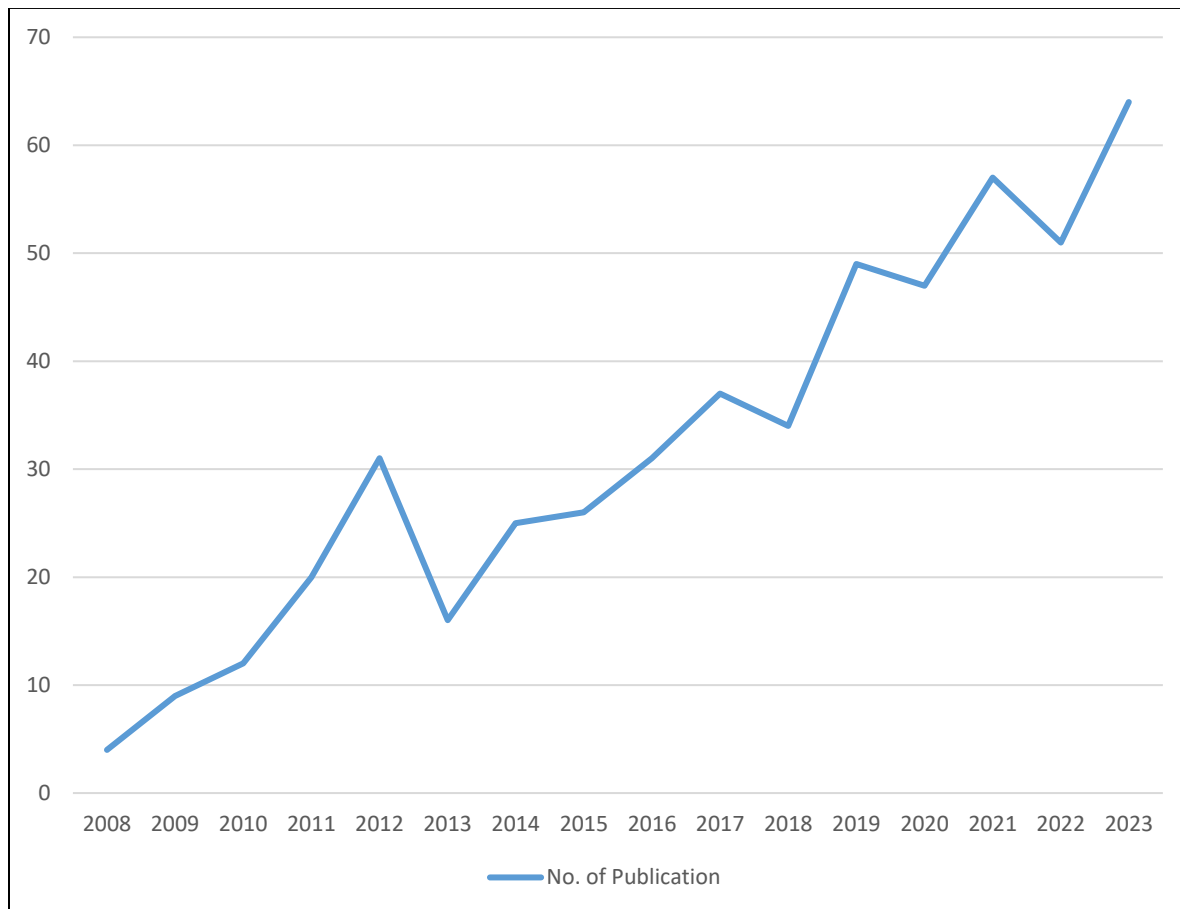


Fig 3. No. of Publication published on Working Capital Management



### 3.6 Top Leading Countries contribution

Table 3: Top 30 Countries with Publication along with their citation

Country	Documents	citations	Total link strength
United States	77	2290	36
India	76	1237	18
China	59	1210	31
United Kingdom	24	732	20
France	19	332	12
Taiwan	19	892	18
Indonesia	16	243	7
Viet Nam	16	236	7
Nigeria	14	178	5
Pakistan	14	235	7
Turkey	14	266	2
Iran	13	309	5
Poland	13	99	0
Jordan	12	265	1
Malaysia	12	57	8
South Korea	12	455	10
Australia	11	166	6
South Africa	11	85	1
Spain	11	463	4
Switzerland	11	227	8
Czech Republic	10	48	5
Finland	10	247	4
Germany	9	197	7
Greece	9	128	4
Canada	8	229	11
Hong Kong	8	164	8
Russian Federation	8	32	2
Saudi Arabia	7	35	5
United Arab Emirates	7	97	6
Ghana	6	98	0

Above table interfered that United States is in the lead with 77 papers, and 2290 citations, and a link strength of 36, underlining its prominent position in the research domain. India is next with 76 documents and 1237 citations, but with a lower link strength of 18, showing a moderate level of collaboration and impact. China has a high link strength of 31, indicating excellent collaborative influence, with 59 documents and 1210 citations. The United Kingdom, despite having fewer publications, reveals influential research with 24 papers, 732 citations, and a link strength of 20.

The high citation numbers of South Korea (12 papers, 455 citations, link strength of 10) and Taiwan (19 documents, 892 citations, link strength of 18) imply significant impact. With strong reviews and cooperation, European nations such as Spain (11 papers, 463 citations, link strength of 4), Germany (9 documents, 197 citations, link strength of 7), and France (19 documents, 332 citations, link strength of 12) produce major contributions. In overall, the most influential countries are the US, China, and the UK, underscoring the significance of global cooperation in promoting major studies.

### 3.7 Prolific Journal in field of research

Table 4: Top 30 Journal with their no. of Publication

Name of Journal	No.of Documents	In terms of %
International Journal of Production Economics	32	6.2
International Journal of Production Research	16	3.1
Journal of Cleaner Production	11	2.1
International Research Journal of Finance and Economics	10	1.9
Investment Management and Financial Innovations	10	1.9
Manufacturing and Service Operations Management	9	1.8
Global Business Review	8	1.6
International Journal of Managerial Finance	8	1.6
Omega (United Kingdom)	8	1.6
International Journal of Financial Research	7	1.4
Journal of Asian Finance, Economics and Business	6	1.2
WSEAS Transactions on Business and Economics	6	1.2
Accounting	5	1
Cogent Business and Management	5	1
Cogent Economics and Finance	5	1
Indian Journal of Finance	5	1
International Journal of Information and Management Sciences	5	1
Journal of Business Economics and Management	5	1
Journal of Industrial and Management Optimization	5	1
Polish Journal of Management Studies	5	1
Risks	5	1
Asian Economic and Financial Review	4	0.8
Decision Support Systems	4	0.8
International Journal of Applied Business and Economic Research	4	0.8
International Journal of Economics and Business Research	4	0.8
Journal of Banking and Finance	4	0.8
Journal of Indian Business Research	4	0.8
Journal of Small Business and Enterprise Development	4	0.8

Based on the table, the "International Journal of Production Economics" is in the top spot with 32 documents, or 6.2% of the total. The "Journal of Cleaner Production" has 11 articles (2.1%), while the "International Journal of Production Research" has 16 documents (3.1%) after it. A variety of publications, including "Investment Management and Financial Innovations" and "International Research Journal of Finance and Economics," each contribute 10 papers, or 1.9% of the total. Other interesting contributions originate from "Omega (United Kingdom)," "Global Business Review," and "International Journal of Managerial Finance," each with eight papers (1.6%).

"Manufacturing and Service Operations Management" supplied nine documents (1.8%). This distribution underscores how important journals having a production and finance concentration in order are in the research field. It would be beneficial to diversify publication places in order to improve the impact and scope of research in this field. Supporting contributions to underrepresented but appropriate sources may promote multidisciplinary collaboration and assist reach a wider readership. In addition, putting greater emphasis on open-access papers might enhance the dissemination and accessibility of the findings.

#### IV. CONCLUSION

The academic landscapes of working capital management (WCM) and profitability research between 2008 and 2023 is drawn out in this bibliometric analysis, which highlights the field's increasing significance to global research. highlighting the contributions of top countries, authors, and journals, the study identifies common subjects that include profitability, liquidity, and the cash conversion cycle. By encouraging collaboration and interdisciplinary involvement, this research underlines the team's quest for understanding that not only increases financial performance but also fosters ethical and sustainable business practices. While there are certain downsides to using Scopus data, its outcomes offer a solid basis for developing theory and practice. To help to ensure enterprises combine profitability with long-term societal well-being and equitable growth, future research ought to build sustainability, ethics, and societal engagement values into WCM paradigms.

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