

A Review Of Working Capital Efficiency: Evidence From Literature And Practice

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Abstract:

Background: Working capital efficiency, a fundamental concept in finance, is one of the key prerequisites in the overall success of a firm. The current literature has delved more on the management aspects of working capital and hence inadequate empirical evidence on efficiency of working capital practices which have a bearing in value creation of firms. Therefore, the purpose of this study was to review the existing literature on working capital efficiency and provide insights on sustainable working capital practices. Further, the study aimed at identifying research gaps that exist in the literature and recommend areas for further research.

Materials and Methods: The study adopted Systematic Literature Review (SLR) methodology to review journal articles whose work had been published and found in Google Scholar Database with 30 citations and above by June, 2023 and published in the period 2004-2021. The study adopted citation analysis, time of publication analysis, geographical analysis and content analysis.

Results: In view of citation based analysis, the results indicated that there is growth of literature in relation to WCE. The highest number of studies focused on working capital management efficiency and profitability. Additionally, it was found that most of the studies were conducted in developed countries like India and America while the date of publication analysis indicated that several of the studies were published between 2013 to 2015. The study finds that although the concept of working capital efficiency is critical to overall financial health of a firm, there is inadequate empirical literature on this concept especially in the developing countries.

Conclusion: The study concludes that the concept of working capital efficiency is critical and has continued to attract remarkable attention from scholars across the globe as indicated by high level of citations in the present literature. Secondly, besides the concept of WCE being imperative, the study concludes that there is growth of literature in this area as was indicated by publication of studies across different dates or years. Thirdly, from the geographical analysis, the study concludes that although the notion of WCE has attracted attention from scholars, there is inadequate literature in this area in the developing countries since most of research studies were found to have been conducted in developed countries.

Keywords: Working Capital Efficiency, Working Capital Management, Future Agenda, Sustainable Practices.

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I. Introduction

The concept of working capital efficiency has continued to gain remarkable attention from scholars over the past years. This is attributed by the point that efficient working capital is a pre-requisite for the overall success of a firm^{1,2,3,4}. Working capital efficiency entails administration of the key components of working capital in a manner that demonstrates a suitable volume of operational capital is sustained to have an effective operation of a firm and for realization of similar goals of liquidity and profitability¹. It involves the arrangement and regulation of the short term assets and obligations in order to eliminate the risk that is associated with liquidity while concurrently doing away with excess investment of these assets^{5,2}. Working capital efficiency is the degree which indicates the ability of a firm in harmonizing the sum relating to investment that is employed for receivables and inventories in relation to the payables on acquisition of inventories³. Therefore, based on the various definitions, working capital efficiency relates to the capability that a firm has in effort to maintain ideal working capital that can be able to handle the daily financial obligations hence minimize the risk that is linked to liquidity while simultaneously enhancing profitability.

According to a report on working capital survey, the subject of working capital efficiency plays a critical part in survival and sustainability of a firm in relation to the management of day to day processes⁶. For instance, the trade survey that 65% of respondents who were top managers of various firms pointed out that working

capital efficiency is a major goal for change management and streamlining of activities. While working capital efficiency (WCE) is an indicator of how well a firm is managing its short term resources in an optimal manner, it equally remains significant to the eternal and long lasting stability or attainment of a firm and in realizing its overall goal of wealth maximization⁷. Firm administrators are able to create value for their stockholders through embracing working capital efficiency⁸. Therefore, this explains the relevance of working capital efficiency to the overall firm goal of maximizing shareholders' wealth which translates to firm value.

Efficient working capital involves maintaining optimum amount of receivables, payables and inventories and efficient administration of cash and short term liabilities while sustaining a tradeoff between high yields and firm liquidity^{9,10}. In this regard, failure to manage firm operations efficiently in relation to the working capital, may lead to bankruptcy or economic distress⁸ which gives a negative perception to investors thus negatively affecting firm value. The firms whose working capital efficiency is high, are not potential to facing financial limitations and they are able to reduce resources that are idle when capitalizing in working capital¹¹. Regardless of the nature and size of a firm, all firms require working capital for every day operations¹². Therefore, enhancing its efficiency is paramount in achievement of the overall firm goals.

A number of reports have shown the current position of various countries and sectors in relation to working capital. The PWC (2019/20) global report indicates that Working capital (WC) performance across the European countries has been found to be steady over the past five years hence increase in value of their firms¹³. However, the report further indicates that 59% of the sectors in UK are still outperforming the EU countries due to the gap in efficient WC in those countries. The Asian countries have, on the other hand demonstrated a slight deterioration in overall net WC performance. The report advocates that refining WC may relief 1.2 trillion Euro of cash which may enhance the capital investment by 48% hence enhance the firm's value. In Kenya, various sectors have been facing liquidity constraints due to accumulation of VAT leading to inefficient working capital¹⁴.

Given this background, it is important to enhance working capital efficiency in bid to promote sustainability and growth of firms. Hence, the existing literature will help unfold the ideal working capital practices¹⁵. Systematic literature reviews have been done on working capital management (WCM) but there is limited review of literature on working capital efficiency (WCE). Though closely related, the two concepts focus on different aspects of handling the short term resources. WCM is the process of managing a firm's current assets and liabilities to make sure that it has balance between liquidity and profitability¹⁶. On the other hand, WCE is concerned with effectiveness / optimization of working capital resources and measures how well a firm is able to convert its current assets into revenue¹. Therefore, the motivation of this study was to review the literature done on working capital efficiency and identify areas for further research.

II. Material and Methods

The study adopted the Systematic Literature Review (SLR) methodology recommended by¹⁷. A systematic methodology that indicates how the review was conducted, is important when carrying out a literature review¹⁸. The study followed the steps indicated in figure 1 below.

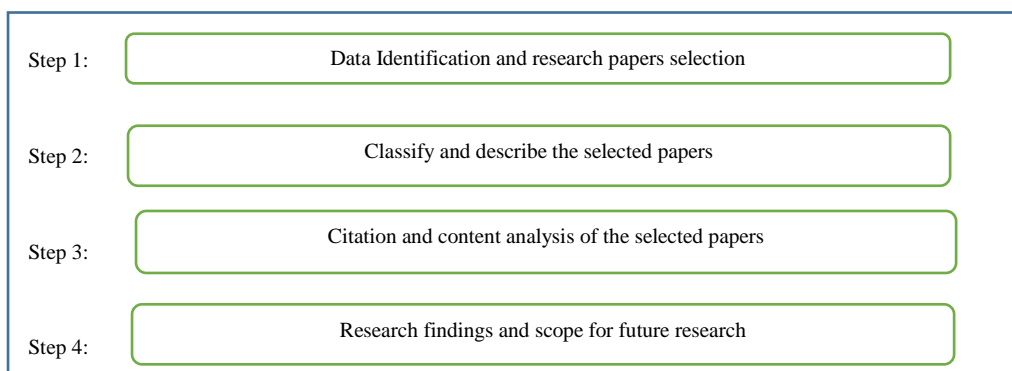


Figure no 1: Systematic Literature Review
Source: Tranfield et al. (2003)

Study Design: Review and content analysis

Study Location: This was a literature review whose empirical studies had been indexed in Google Scholar database.

Study Duration: April 2022 to July 2023.

Sample Size: 25 studies.

Sample Size Calculation: The studies were selected from the Google Scholar database if they met the inclusion and selection criteria.

Subjects and Selection Criteria: The inclusion and selection criteria was as indicated below:

Inclusion criteria:

1. The title must entail the word “efficiency” in relation to “working capital”.
2. Published during 2004-2021 (17 years)
3. Number of citations was 30 and above
4. Published in peer reviewed journals, conferences or books

Exclusion criteria:

1. The title did not have the word “efficiency” in relation to “working capital”.
2. The papers were not Published during 2004-2021 (17 years)
3. The papers did not have 30 citations and above
4. All the papers not published in peer reviewed journals, conferences or books

Procedure methodology

Firstly, the study identified the research papers by searching for the words working capital efficiency in Google Scholar database and the papers that had the word “efficiency” in relation to working capital for the period 2004-2021 were selected. The second step was to classify the selected papers based on the year of publication and number of publications. Thereafter, the citation and content analysis were done in the third step. In the fourth step, the research findings were drawn from the results of the analysis, discussed and a scope for future research identified.

III. Results

This section presents the results that were obtained from the analysis of the study. Further, the interpretation of the results is also presented in this section. Finally, a discussion on the results and analysis was done in this section.

Citation Based Analysis

The study did citation based analysis to determine the paper that had the highest number of publications and the year of its publication. Table no 1 presents the list in descending order. The number of citations per paper in descending order. Based on the results, the study found that the paper by Ganesan (2007) titled “An Analysis of Working Capital Management Efficiency in Telecommunication Equipment Industry” had the highest number of citations of up to 373. The paper by Ghosh and Maji (2004) titled “Working Capital Management Efficiency: A Study on the Indian Cement Industry” was the second with 250 number of citations. The date of publication of the second paper was three years earlier than the paper by Ganesan. Further, the results indicate that 13 papers out of the 25 research papers had 50 and above number of citations translating to 52%. 5 of these papers or 38.46% were published in 2013 onwards (in the last 10 years).

Table no 1: Working Capital Efficiency

#	Research Title and Author(s)	Citations	Year of Publication
1	An Analysis of Working Capital Management Efficiency in Telecommunication Equipment Industry - Ganesan, V.	373	2007
2	Working Capital Management Efficiency: A Study on the Indian Cement Industry – Ghosh, S. and Maji, S. G.	250	2004
3	Relationship between Efficiency Level of Working Capital Management and Return on Total Assets in Ise - SEN, M. and ORUÇ, E.	232	2009
4	The Relationship between Working Capital Management Efficiency and EBIT - Ramachandran, A. and Janakiraman, M.	231	2009
5	The impact of corporate governance on working Capital Management Efficiency of American manufacturing firms. - Gill, A. S., and Biger, N.	213	2013
6	Working Capital Management Efficiency and Corporate Profitability: Evidences from quoted firms in Nigeria – Barine, M., N.	108	2012
7	Working Capital Management Efficiency: A Study on the Small Medium Enterprise in Malaysia - Kasirana, F. W., Mohamadb N. A. and Chin, O.	104	2015
8	The Impact of Working Capital Efficiency on Profitability – an Empirical Analysis on Jordanian Manufacturing Firms –	96	2011

	Hayajneh, O. S. and Yassine, F. L.		
9	The Relationship between Working Capital Efficiency and Profitability – Ashraf, C. K.	81	2012
10	Managing Efficiency and Profitability Through Working Capital: an Empirical Analysis of BSE 200 Companies - Kaur, H. V. and Singh, S.	71	2013
11	Working Capital Management Efficiency of Cement Sector of Pakistan – Afza, T. and Nazir, M.	57	2011
12	Does Corporate Governance Influence the Efficiency of Working Capital Management of Listed Firms: Evidence from Ghana - Fiador, V	56	2016
13	The Relationship between the Efficiency of Working Capital Management Companies and Corporate Rule in Tehran Stock Exchange - Jamalinesaria, S. and Soheili, H.	51	2015
14	Efficiency of Working Capital Management and Profitability of UAE Construction Companies: Size and Crisis Effects - Nobanee, H.	43	2017
15	An analysis of working capital efficiency and shareholder return - Filbeck, G., Zhao, X., & Knoll, R.	40	2017
16	The Relationship Between Corporate Governance and Working Capital Management Efficiency of Firms Listed at The Nairobi Securities Exchange - Kamau, S.M. and Basweti, K.A.	38	2013
17	Assessing Working Capital Management Efficiency of Indian Manufacturing Exporters - Seth, H., Chadha, S., Ruparel, N., Arora, P.K. and Sharma, S.K.	39	2020
18	Exploring Predictors of Working Capital Management Efficiency and their Influence on Firm Performance: An Integrated DEA-SEM Approach - Seth, H., Chadha, S., Sharma, S.K. and Ruparel, N.	37	2021
19	The Effect of Working Capital Management Efficiency on the Operating Performance of the Industrial Companies in Oman - Jamil, S.A., Kareem, M., Nasif, F.	36	2015
20	Efficiency of Working Capital Management and Firm Value: Evidence From Chinese Listed Firms - Vijayakumaran, R.	35	2019
21	Efficiency Of Working Capital On Company Profitability In Generating Roa (Case Studies In Cv. Tools Box In Surabaya) - J.E. Sutanto, Yanuar Pribadi	34	2012
22	Relationship between Efficiency Level of Working Capital Management and Profitability of Firms in the Textile Sector of Pakistan - Chhapra, I. O. and and Naqvi, N. A.	34	2010
23	Managing working capital efficiency in capital goods sector in India - Kaur, H. V., and Singh, S	34	2013
24	Working Capital Management Efficiency in Indian Manufacturing Sector: Trends and Determinants - Goel, U., & Sharma, A.	33	2015
25	Measuring impact of working capital efficiency on financial performance of a firm: An alternative approach. - Prasad, P., Sivasankaran, N., Paul, S., and Kannadhasan, M.	32	2019

Source: Author's Compilation (2023)

Time of Publication

The date of publication analysis of the selected research papers was done and the results were as indicated in Figure no 2. The number of papers published within a given period or year of the selected papers based on the criteria of this study. From the results, the study finds that the highest number of papers was published in year 2013 and year 2015 each with 4 papers. The period that followed was for the year 2012 where 3 papers were published. On the other hand, the study found that the earliest paper was published in year 2004 while the most recent paper was published in year 2021.

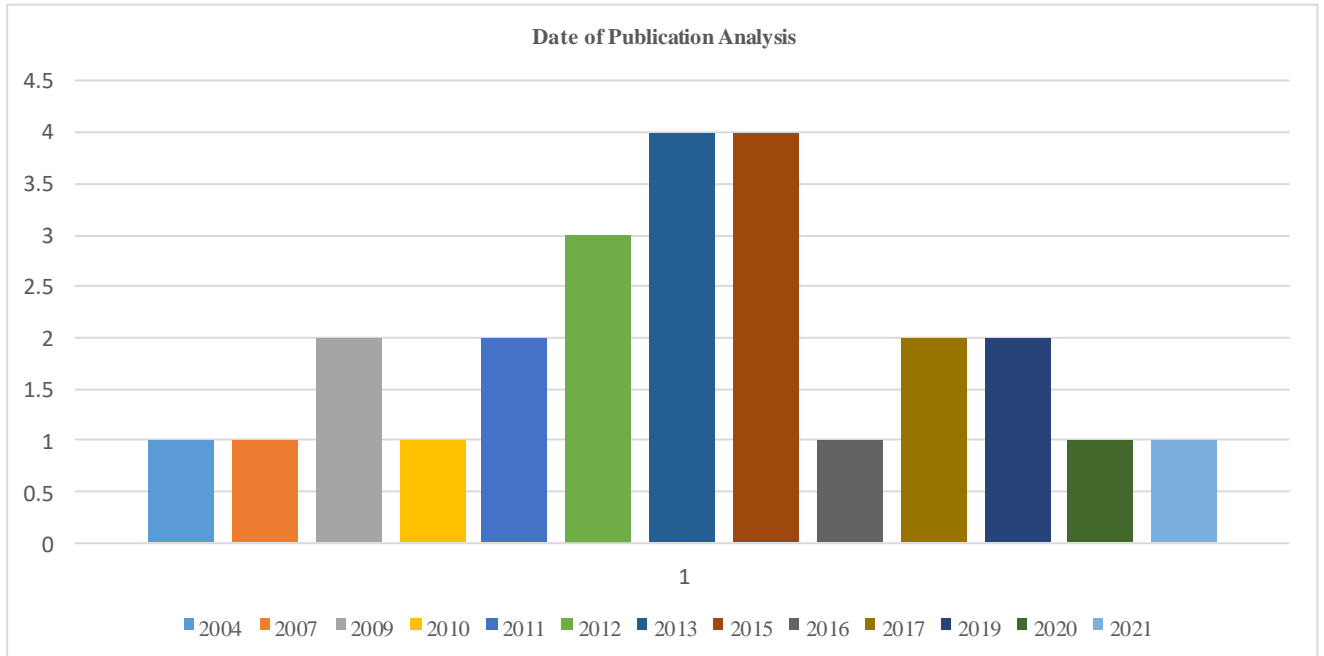


Figure 2: Date of Publication Analysis
Source: Author's Compilation (2023)

Geographical Analysis

Given that there has been potential growth of literature related to working capital efficiency, this study was interested in contextual analysis of the studies done using the selected research papers. The results were as indicated in Figure no 3. The results in Figure 3 indicates the percentage of research papers that were conducted in various countries. Based on the results, the study found that the majority of studies relating to working capital efficiency were conducted in India translating to 34% of the total selected studies. Further, the second largest was studies conducted in America and Indonesia at 9% followed by those done in Pakistan at 8%. All the other studies which were conducted in UAE, Oman, Nigeria, Malaysia, Jordan, Iran, China, Ghana, and those whose data had been retrieved form the CMIE Prowess database stood at 4%.

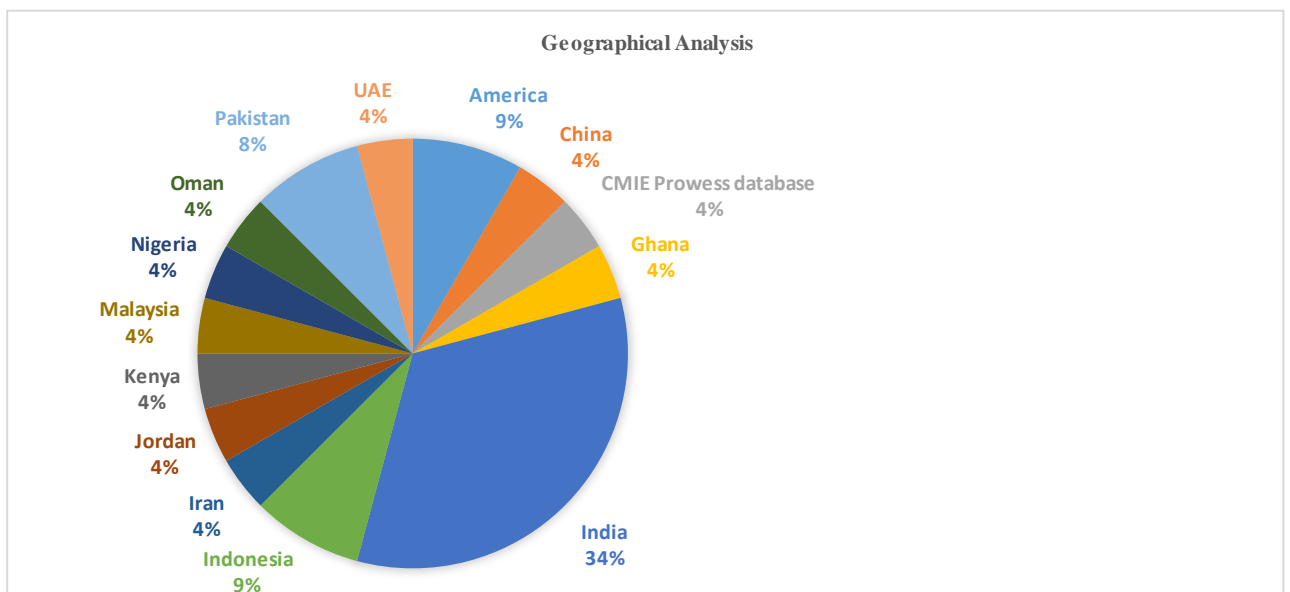


Figure no 3: Geographical Analysis
Source: Author's Compilation (2023)

Content Analysis

The content analysis of various selected studies was done and the results were as indicated in Figure no 4. The results indicate the categorization of studies based on the themes and content of the selected studies. The study finds 11 main categories that the research papers fall in as below in descending percentage order:

1. Relationship between working capital efficiency and profitability 32%.
2. Analysis of working capital management efficiency 20%.
3. Corporate governance and working capital management efficiency 16%.
4. Effect of working capital management on operating performance 4%.
5. Working capital management efficiency and firm value 4%.
6. Relationship between WCME and EBIT 4%.
7. Working capital efficiency and shareholder value 4%.
8. WCME and exogenous variables 4%.
9. WCME and Return on Total Assets 4%.
10. Predictors of WCME and influence in firms 1%.
11. WCE and financial performance 1%.

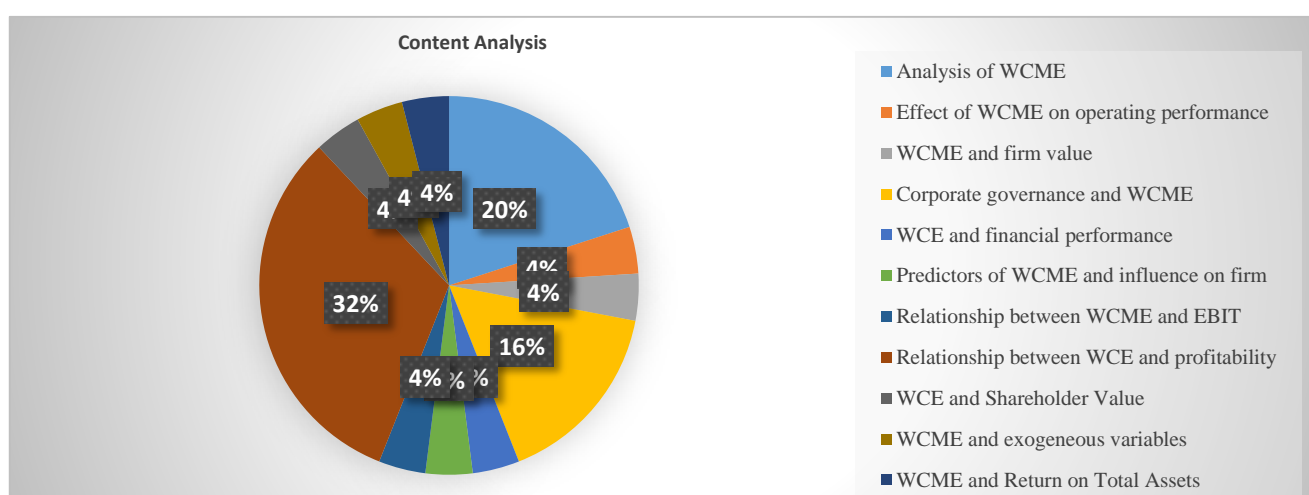


Figure no 4: Content Analysis
Source: Author's Compilation (2023)

IV. Discussion

The findings of the study indicate that papers on working capital efficiency were prevalent and have attracted remarkable attention in the recent decade. Further, the concept of working capital efficiency began as early as in the year 2004 and that there has been a potential growth of literature in this area. The developing body of empirical evidence is a sign that the concept of efficient working capital is critical for growth and survival of firms¹⁹. Therefore, the findings indicate that most of studies relating to working capital efficiency were conducted in developed countries while the least of the studies were mainly in the developing countries. In addition, the common theme that had the highest percentage is on the relationship between WCE and profitability. This indicates that the focus of those studies was on profitability of a firm as the main goal of a firm. Hence, the focus of other goals of a firm including firm value or shareholder value, and corporate governance was low. There is inadequate literature on the link between WCE and firm value as the main goal of firm²⁰.

V. Conclusion

Based on the results in the preceding section, various conclusions were drawn from the findings of the study. Firstly, the study concludes that the concept of working capital efficiency is critical and has continued to attract remarkable attention from scholars across the globe as indicated by high level of citations in the present literature. Secondly, besides the concept of WCE being imperative, the study concludes that there is growth of literature in this area as was indicated by publication of studies across different dates or years. Thirdly, from the geographical analysis, this study concludes that although the notion of WCE has attracted attention from scholars, there is inadequate literature in this area in the developing countries since most of research studies were found to have been conducted in developed countries.

VI. Recommendations to Policy, Theory and Practice

Given the conclusion of the study that working capital efficiency is critical for firms, this study makes various recommendations. In relation to policy, this study recommends that governments and industries or regulators can develop policies that enhance ideal working capital practices and encourage businesses in sustainable practices. For instance, the government could give tax benefits to firms or businesses that have a record of efficient working capital in relation to payables, receivables, and inventory. To theory, this study recommends that scholars can pay attention to areas that will enhance sustainable working capital practices such as integration of environmental, social and governance factors into working capital efficiency especially in the developing countries. In regard to practice, this study recommends that adoption of digitalization and technology by firm managers in order to increase WCE is essential. For instance, investing in technology systems such as Enterprise Resource Planning (ERP), just-in-time inventory management system, and automated invoicing or billing software is imperative in promoting sustainable working capital practices that would also enhance financial health and success of business.

VII. Future Research Agenda on Sustainable Working Capital Practices

In view of the literature review on WCE, and in bid to enhance sustainability of working capital practices in today's changing dynamics of firms' competitive strategies, this study proposes the following broad themes for future research agenda.

1. *Efficient Cash Flow Management*: Given the fiscal / monetary dynamics and changes in financial regulations to cope with difficult economic conditions across the globe, investigation on effective strategies that can enhance efficient cash flow management is vital. For instance, changes in taxation rates and policies requires advanced corporate strategies of cash flow management that will inform compliance into the government regulations. In Kenya, for example, the recent Finance Bill, 2023, has various amendments that will require efficient strategies on cash flows in the corporate world.
2. *Digital Transformation and Innovations in Working Capital Optimization*: This is investigation of how developing technologies like data analytics, artificial intelligence, and block chain can be linked to increase working capital efficiency practices, possibly translating to improved projecting, demand planning, and management of financial risk.
3. *Green Supply Chain and Inventory Turnover*: Exploring how firms can reduce excess and resource consumption in their supply chains, with an aim of enhancing inventory levels and more efficient working capital allocation.
4. *Working Capital Efficiency and Long-term Value Creation*: The aim of every investor is to maximize wealth and hence firm value. In this regard, investigating the relationship between WCE and long term value creation would potentially lead to sustainable working capital practices that would enhance firm value.
5. *Incorporation of Environmental, Social and Governance (ESG) factors into Working Capital Efficiency*: This is investigation of the effect sustainable practices on individual key working capital components such as receivables, payables, and inventory.
6. *Collaborative Approaches*: Explore how partnership between firms, suppliers, and other stakeholders can lead to more sustainable working capital practices through shared goals, information sharing, and collective action.

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