

A Critical Review on Working Capital Management and Financial Distress in Chartered Public Universities in Kenya

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ABSTRACT

Working capital management is a matter of concern in public universities in Kenya, with the main challenge being how to prudently manage assets in order to achieve financial self-sufficiency. Working capital management impacts the financial health of an organisation. Both public and private sector entities are prone to mismanagement of some kind, not only in Kenya but also regionally and globally. The PRISMA guidelines were adopted in the systematic review process, where 55 articles were narrowed down to the final 11 articles. From the reviewed papers, poor management of the components of working capital management was concluded to have caused financial distress. Other aspects, like funding and government policy, are other contributing factors. The reviewed literature on working capital management is the major one. The reviewed literature was anchored on several theories, which include financial distress theory, working capital management theory, free cash flow theory, cash conversion cycle theory, and Altman's Z score model. The study topics were tested using the initial inclusion criteria by analysing the key words used in the studies. The key words sought were working capital, working capital management, and financial distress. Most of the data used in the reviewed studies was secondary. The reviewed literature was for a period of ten years, ranging from 2013 to 2022, as published in journals and full papers. The data was organised by panel data technique, and financial ratios were computed using the three-statement model, which is basically an integrated financial statement model that comprises a balance sheet, income statement, and cash flow statement linked together. Content analysis has been used for the analysis. The results revealed that few studies have been conducted in public universities, while the majority were done in Kenya's manufacturing sector. The studies reported mixed results on the relationship between financial distress and working capital management. The outcome becomes more confounded when more than two measures are used to conceptualise working capital management. Therefore, further studies ought to be conducted in public universities in Kenya by blending both secondary and primary data and also considering other research designs with the inclusion of a moderating variable such as government policies.

Key words: Chartered Public Universities, Financial Distress, Working Capital Management

I. INTRODUCTION

Working capital management poses a substantial challenge for businesses, spanning both the public and private sectors, both within Kenya and globally. Given its role as the lifeblood of any enterprise, effective working capital management becomes paramount. Numerous organizations have experienced a cash crunch in the current global environment, which is frequently a result of poor working capital management. Notably, even corporations with positive ratings have succumbed to financial distress, indicating that this is a complex issue that transcends mere prediction models (Habib & Kayani, 2022).

Working capital management is an act of planning, organizing, and controlling the components of working capital like cash, bank balances, inventory, receivables, payables, overdrafts, and short-term loans (Salawu & Alao, 2014). It indicates to management whether the firm is well managed or not. If not well managed, the management can therefore take corrective action. Competitors of the firm can use working capital management to identify their areas of weakness in order to gain a competitive edge. Working capital management ensures a company has sufficient cash flow in order to meet its short-term debt obligations and expenses (Sayidah & Assagaf, 2020).

Financial distress is a condition in which a company or individual cannot generate sufficient revenues or income, making it unable to meet or pay its financial obligations. This is generally due to high fixed costs, a large degree of

illiquid assets, or revenues sensitive to economic downturns. Recent history indicates that there have been several corporate failures throughout the world (Mahama, 2015). In the United States of America (USA), business failure received more exposure during the 1970s, especially the recessionary years of 1980–1982. This heightened attention occurred during the explosion of defaults and bankruptcies of large firms in the years 1989–1991 and an unprecedented interest in the 2001–2003 corporate debacle and distressed years. In Ethiopia, manufacturing firms face financial distress as a result of a low level of debt service coverage (Isayas, 2021).

According to Mungai and Bula (2018), in their study on the turnaround strategies and performance of Kenya Airways, they noted that many organizations are facing declining performance. In his case study on financial distress prediction at Uchumi Supermarkets Limited, Kamau (2013) concluded that there is a need to improve working capital in order to cushion the company against distress shocks. Uchumi supermarket was established in 1976 and sailed smoothly in business, enjoying the advantage of government support as one of the first supermarkets in Kenya. (Uchumi Supermarket Limited, 2016). In the early 2000s, the supermarket started to experience operational and financial constraints due to rapid expansion strategies and weak internal control systems. After 30 years in operation, it was declared bankrupt in June 2006 and later placed under receivership. It was later suspended by the Capital Markets Authority (CMA) from listing on the Nairobi Stock Exchange (NSE) (Uchumi Supermarket Limited, 2016).

Mumias Sugar Company, a sugar processing firm located in the western region of Kenya, was founded in 1971 with the government holding majority shares of 71%, Commonwealth Development Corporation of the United Kingdom 17%, Kenya Commercial Finance Company 5%, Booker McConnel 4%, and East African Development Bank 3%. The firm was later privatized in 2002. Being a major player in the sugar cane industry in Kenya, it continued to experience steady growth until 2012. Operations were mainly affected by the drop in supply of sugar cane and poor quality cane arising from climate change, characterized by dry spells experienced in 2009 and excessive rain experienced in 2011. Industry rivalry then manifested through cane poaching in its zone, and that birthed its struggles, which led to its eventual collapse (MSC, 2012). In a case study of Mumias Sugar Company on Corporate Failure of the Sugar Industry in Kenya, Simiyu (2021) pointed out that a lack of internal controls led to the corporate failure of the firm. According to Mwariri (2020), these and other firms go through cycles of financial distress that could otherwise be avoided by prudent management of working capital.

University education in Kenya is regulated by the Commission for University Education (CUE), which was established under the Universities Act, No. 42 of 2016, as the successor to the Commission for Higher Education (CHE). According to the Commission of University Education, there are 31 chartered public universities in Kenya and six public university colleges. Reports from the Auditor General have indicated that most of the public universities are unable to meet their financial obligations, such as payment of lecturers and remittance of statutory levies to the Kenya Revenue Authority (Gok, 2019). The commission on university education indicated that some universities have failed to periodically demonstrate that they are financially sustainable (Wanyama, 2021).

Financial distress is a crude financial phenomenon experienced globally across all industries, both for profit and for non-profit organizations. Harsh economic factors have contributed immensely to the financial hardships suffered by most firms. When an organization struggles financially to the extent of being unable to meet its basic obligations, then that's a sign of poor working capital management. Firms are faced with the main challenge of fear of sinking into distress (Leon, 2020). Lack of robust working capital management leads to the mishandling of capital. Firms face liquidity constraints because of poor management of working capital.

Public universities in Kenya are experiencing struggles in meeting their obligations, leading to industrial unrest, labor cases, layoffs, and long-overdue pending bills. According to Munene (2019), one of the key challenges for public universities is how to prudently manage their working capital as a means of overcoming financial distress. This study therefore seeks to answer the question, 'does working capital management have an effect on financial distress in chartered public universities in Kenya?'

II. LITERATURE REVIEW

2.1 Theoretical Review

A theory refers to a tried, tested, and verified ideology aimed at explaining and helping the general understanding of the relationship between the underlying phenomena (Eden & Ackermann, 2018). This critical paper narrowed down to two main theories used by different researchers: the working capital management theory and the financial distress theory.

Baldwin and Scott (1983) developed the financial distress theory, which states that businesses can experience financial distress if they fail to pay their debts on time, frequently as a result of subpar financial performance. This distress can manifest before the actual default risk becomes evident, with credit risk and default risk being associated with the time debts remain unpaid beyond their due dates. However, Isayas (2021) proposes that a firm's viability can deteriorate even if it maintains profitability. This occurs when a firm's growth rate surpasses its internal rate of return, leading to insufficient revenue flow for necessary expenditures, particularly if the firm carries high levels of debt. The indicators of liquidity and profitability serve as measures of a firm's health, with positive and robust indicators indicating a lower risk of bankruptcy.

The working capital management (WCM) theory, which Sagan developed in 1955, emphasizes the dynamic interaction between a firm's current assets and liabilities. Effective WCM aligns with improved liquidity, solvency, efficiency, profitability, and shareholder wealth maximization. Wachira (2018) highlights how WCM theory applies to universities, guiding them to strike a balance between various WCM components to avoid financial distress. Adhering to the prescriptive WCM theory involves prudent management of all components of working capital, such as cash, inventory, accounts receivables, and accounts payables, for optimal returns. Larger working capital signifies greater sustainability for a firm (Karvonen, 2010), indicating successful mitigation of financial distress—a crucial objective for all types of organizations.

In conclusion, the financial distress theory underscores the consequences of failing to meet debt obligations due to poor performance, while Isayas (2021) argues that even profitable firms can falter if growth outpaces the internal rate of return. On the other hand, the working capital management theory, exemplified by Wachira (2018), stresses prudent management of current assets and liabilities for enhanced financial health and sustainability. Both theories provide valuable insights into the complexities of corporate financial management and the avoidance of financial distress.

2.2 Empirical Review

Globally, Bisogno et al. (2014) investigated the financial condition of Italian universities, focusing on cash- and budget-level solvency as well as service-level solvency. Our model included structural factors (which refer to both size and quality in structures), organizational factors (which refer to the performance evaluation of the strategic mission of universities, such as research and teaching activities as well as the so-called third mission), and hybrid factors (which essentially refer to the financial relationship between the central government and each university). The findings were that neither structural nor organizational factors seem to affect financial distress, with only the hybrid factors being significant.

Jafari et al. (2014) examined the effects of working capital management on a firm's financial distress probability for firms listed on the Tehran Stock Exchange. The results of this study, along with the financial data of 54 firms listed on the Tehran Stock Exchange during the years 2002–2010, indicate that there is a negative relationship between working capital management and the risk of bankruptcy, and this means that whenever a firm's cash conversion cycle is longer, it will be in a worse situation of bankruptcy risk.

Hung et al. (2021) examined the impact of working capital management on the financial distress of enterprises listed on the Vietnamese stock exchange. Data were collected from the financial statements of 395 enterprises listed on the Ho Chi Minh Stock Exchange and the Hanoi Vietnam Stock Exchange, with a total of 1,580 observations in the period of 2015–2018. The empirical results showed that the average collection period and inventory cycle have a positive impact on short-term solvency and long-term solvency, while the average payment period has the opposite impact.

Habib and Kayani (2022) aimed to explore the relative efficiency of working capital management (WCM) for Emirati firms before and during the coronavirus crisis. A data envelopment analysis (DEA) was applied to assess the relative efficiency of the WCM. This study used the emerging market Z-score model to predict the likelihood of financial distress. The logistic regression was applied to investigate the impact of the efficiency of WCM on firms' financial distress. The results of this study model showed a negative and significant influence of the efficiency of WCM on firms' financial distress.

Olang (2021) examined the relationship between working capital management and financial distress among the private companies in the flour milling and animal feed manufacturing industries in Rwanda. The study adopted a descriptive-correlational research design in examining the eight private companies in the flour milling and animal feed manufacturing sectors in Rwanda. The results indicated that working capital management, comprising the average collection duration, the average payment period, and the number of days' inventory, has a substantial impact on financial hardship among private businesses in Rwanda's flour milling and animal feed manufacturing sectors.

Aggrey (2015) investigated the relationship between working capital management (WCM) determinants and the financial distress level of the listed manufacturing companies in Ghana. A quantitative research approach involving panel least squares estimates with a white cross section was used for analysis. The key finding of this research was that returns on assets, size, growth, and current ratio, as well as the cash conversion cycle, as internal determinants of working capital, have a significant relationship with the financial distress level of listed manufacturing companies in Ghana.

Mwariri (2020) assessed the association between working capital management practices and the financial distress of firms publicly listed on the Nairobi Stock Exchange (NSE). The total population of this study was 67 firms publicly listed in Kenya. Purposive sampling was adopted in the selection of 25 firms listed in manufacturing and related sectors. Study findings documented that the cash conversion period had a negative association with the financial distress of listed companies in the NSE. The average repayment period had an inverse and significant influence on the financial distress of listed non-financial companies in the NSE. The inventory conversion period had a negative and significant association with the financial distress of listed companies in the NSE. The accounts payable period had a positive and significant association with the financial distress of listed companies in the NSE.

Onyango and Ngahu (2018) sought to determine the influence of working capital management on financial distress in the hospitality industry. A descriptive survey research design was adopted in the study. The targeted population is composed of 100 hotels in Nairobi. The study targeted all the financial managers in all the hotels. The study used a simple random sampling method to select 50 hotels whose financial officers served as the study respondents. Data collection was done through the use of questionnaires. Findings from the study concluded that cash conversion cycle, inventory level, accounts receivables, and current liabilities were insignificant to financial distress management in the hospitality industry.

Muigai and Nasieku (2021) examined the way in which management of working capital affects the financial distress of non-financial firms listed on the Nairobi Securities Exchange. The study adopted a longitudinal research design and collected secondary data over a ten-year period (2009–2018) from a census of the 40 non-financial firms listed on the Nairobi Securities Exchange. The study found that cash management had a positive and significant effect on the firms' distress index. Further, the study revealed that the inventory holding period was negatively and significantly related to the firms' financial distress index. The study also showed that suppliers' payment periods had a positive and significant effect on financial distress indicators. The study, however, depicted a negative but insignificant relationship between the receivables period and financial distress.

Gao (2021) sought to determine the effect of WCM judgments on the financial distress of listed manufacturing enterprises in Kenya. To accomplish the research aims, data were obtained from financial report releases over a five-year period (2016–2020) using a correlation approach. The connection between independent and dependent variables was determined using multiple regression analysis. The results indicate a positive connection between the degrees of financial hardship experienced by publicly traded manufacturing businesses throughout the research period and the return projected by the regression model, where the coefficient of multiple correlation was 0.485.

Onchangwa (2019) sought to establish the effects of working capital on the financial distress of non-financial firms listed at the Nairobi Securities Exchange. The study employed a quantitative research design. All 41 non-financial firms listed at NSE as of December 2016 comprised the population of the study. The study's findings showed that cash had a positive and significant effect on financial distress; inventory had a negative and significant effect on financial distress; receivables indicated a negative and significant effect on financial distress; and payables management indicated a positive and significant relationship with financial distress.

2.3 Conceptual Review

The conceptual review delves into critical dimensions of financial distress within public universities, encompassing effective liquidity, accounts receivables, accounts payables, and inventory management. An analysis of the significant background of government regulations governing university funding complements this investigation. As depicted in Figure 1, the intricate interplay of these elements forms a comprehensive framework that underpins the financial sustainability and operational vitality of public universities. This review seeks to unravel the intricate dynamics shaping financial distress in these institutions and their interconnectedness, shedding light on strategies to enhance financial resilience and mitigate potential crises.

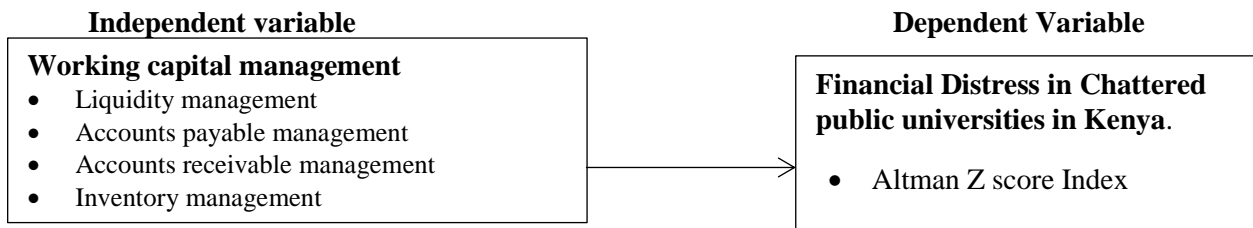


Figure 1
Conceptual Framework.

III. MATERIALS & METHODS

The study adopted a systematic review as per the Cochrane reviews handbook using the CABI abstract database and Preferred Reporting Items for systematic Reviews and Meta-Analysis Guidelines (PRISMA). The study consisted of a literature search from published sources and focused on reviews of working capital management and financial distress. Data was independently extracted from published sources using content analysis and structured documentary guides. The study used a combination of professional views; collected work searches were used to advance the content and face legitimacy. The information was collected from the Google Scholar search engine, the Wiley Online Library, the Directory of Open Access Journals, and others in recent times. The search strategy utilized a set of carefully selected keywords and Boolean operators, including "working capital," "working capital management," and "financial distress." The search was from 2013 until 2022 of published, peer-reviewed literature to synthesize information. A total of 55 search records yielded 21 potential studies after the removal of duplicates. A full text evaluation of the 21 articles was done, out of which 10 articles were excluded since they were not prospective, leaving 11 articles, which were then used for the critical review.

IV. FINDINGS

4.1 Description of the Sample Studies

The sampled studies were conducted between 2013 and 2022, with the majority of the studies conducted in 2021, as shown in Figure 2.0. In regards to the number of citations, three of the studies have not been cited at all, 61.5% of the studies have been cited between 2 and 5 times, and 15.4% of the studies have been cited more than 5 times, with one of the studies attracting 20 citations: "Bisogno, M., Citro, F., & Tommasetti, A. (2014). The financial distress of public sector entities: Evidence from Italian public universities. *International Journal of Accounting, Auditing, and Performance Evaluation*, 10(2), 203-227."

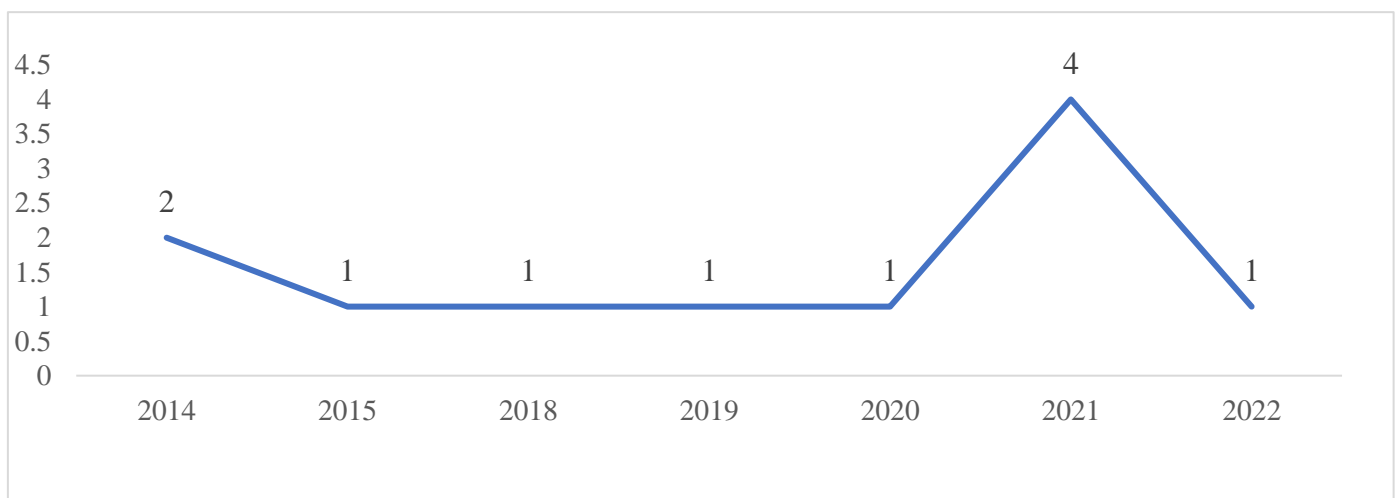


Figure 2
Time distribution of the Journals on Working Capital and Financial Distress

4.2 Research Methodology Findings

This section presents a methodological overview of reviewed studies, encompassing research designs, data sources, geographical scope, and variable measurement approaches in financial distress and working capital management research.

Table 1
Findings

Research design	Frequency	Percentage
Panel Research Design	5	45.50%
Correlation Design	2	18.20%
Casual	1	9.10%
Descriptive	1	9.10%
Descriptive-Correlational	1	9.10%
Longitudinal	1	9.10%
Totals	11	100%
Data Sources		
Secondary	10	90.9%
Primary	1	9.1%
Totals	11	100%
Study Region		
Global	3	27.40%
Regional	2	17.50%
Kenya	6	55.10%
Totals	11	100%
Sampling Frame		
Listed firms	8	73%
Universities	1	9%
Hospitality firms	1	9%
Manufacturing firms	1	9%
Totals	11	100%

Source: Author (2023)

In regards to methodological approach, the reviewed studies identified six research designs, with 45.5% using panel research design and 18.2% using correlational research design. Other research designs were causal research design, descriptive survey, descriptive-correlational, and longitudinal research design. Further, 10 of the 11 studies used secondary data, while the remaining used primary data. The results revealed 55.1% of the studies were conducted in Kenya, while 27.4% were conducted abroad, with only 17.5% conducted in Africa. The majority of the studies were conducted among listed firms (8). Only one of the studies was conducted at a university and the other in the hospitality industry. Manufacturing firms were four, of which three were listed firms.

In regards to the conceptualization of the study variables, the majority of the studies, i.e., 9 out of 10, used Altman's Z score to measure financial distress (a dependent variable), while the remaining two used insolvency and bankruptcy probability. For working capital management, various measures were applied: receivable management practices, payable management practices, and inventory management practices in regards to primary data, while secondary data studies applied the average collection period, inventory cycle, number of days inventory, average payment period, cash conversion period, inventory conversion period, accounts payable period, cash management, inventory holding period, suppliers' payment period, and receivables period.

4.3 Empirical findings

The empirical findings of the reviewed studies revealed mixed findings on the relationship between working capital management and financial distress. Four of the studies revealed a significant relationship whereby working capital management has a negative effect on financial distress. For instance, Jafari et al. (2014) examined the effects of working capital management on a firm's financial distress probability. Results indicated that there is a negative

relationship between working capital management and the risk of bankruptcy, which means that when a firm's cash conversion cycle is longer, it signifies bankruptcy risk. Further results were supported by Habib and Kayani (2022), Olang (2021), and Aggrey (2015).

Two of the studies also reported an insignificant effect of working capital management on financial distress. Bisogno et al. (2014) found that neither structural nor organizational factors seem to affect financial distress. Onyango and Ngahu (2018) sought to determine the influence of working capital management on financial distress in the hospitality industry. Findings indicated an insignificant relationship where cash conversion cycle, inventory level, accounts receivables, and current liabilities were insignificant to financial distress management in the hospitality industry.

Mixed results were observed in regard to various components of working capital management, like cash, inventory, accounts payables, and accounts receivable. This shows that various components of working capital could be receiving different treatment with regard to the internal control measures that may not have been fully implemented in the specific organizations. When the data collected is not subjected to thorough diagnostic tests, it could lead to such mixed results due to outliers. For instance, Muigai and Nasieku (2021) found that cash management had a positive and significant effect on the firms' distress index, while the inventory holding period was negatively and significantly related to the firms' financial distress index. The study also showed that suppliers' payment periods had a positive and significant effect on financial distress indicators. The study, however, depicted a negative but insignificant relationship between the receivables period and financial distress. These results were also similar to those of Muigai and Nasieku (2021), Gao (2021), Onchangwa (2019), Hung et al. (2021), and Mwariri (2020). Such inconsistency in study outcomes suggests a research gap, an irregularity in data testing, or faulty data collection instruments.

Most of the studies showed a significant positive relationship between the WCM and financial distress. For public universities, it implies that financial distress is most likely due to poor management of the components of working capital, which are basically liquidity, accounts payable, accounts receivable, and inventories. This relates to the case scenario in this study, where public universities have been recorded as going through tough economic times.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

Eleven studies were reviewed, including journals, published articles, and full papers. Systematic content analysis was done, and the literature was narrowed down to the most relevant articles on working capital management and financial distress, done within a period of 10 years (2013–2022). The majority of the studies were published in 2021, with a maximum citation count of 20 times. Panel research design was commonly used, and secondary data was the most preferred. Even though the studies have adequate visibility, the majority of them were conducted in Kenya, focusing on manufacturing firms. Only one study focused on universities, and it was conducted in Europe.

Financial distress was measured using Altman's Z score, while conceptualization of working capital management involved average collection period, average payment period, accounts payable period, suppliers' payment period, cash conversion period, cash conversion cycle, cash management, inventory cycle, number of days inventory, inventory conversion period, inventory holding period, receivables period, debtor payment period, accounts receivable, average collection period, debtors turnover ratio, and cash management.

The reviewed studies indicated that the relationship between working capital management and financial distress is not conclusive, and the outcome was a factor of the context of the study as well as the conceptualization of working capital management. The conceptualization in the service industry differs from that in the non-service industry. In this regard, some studies have indicated a negative effect of working capital management on financial distress, while others have failed to indicate a significant effect of working capital management. The outcome becomes more confounded when more than two measures are used to conceptualize working capital management.

5.2 Recommendations

It is evident that working capital management has an influence on financial distress; therefore, the management of public universities should reduce the time taken to collect cash from students and clients. The government should also come up with policies that would enhance the working capital of public universities to limit insolvency. For researchers, the majority of the studies were done in Kenya, not focusing on public universities; therefore, there is a need for further studies to investigate how working capital management influences the financial distress of public

universities. Lastly, the conceptualization of working capital management has resulted in a mixed relationship between the two variables. Therefore, further studies should include moderating variables such as government policy and firm characteristics.

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