INNOVAR
VOL. 36. NÚM. 99. ENE.-MAR. 2026 (E107695)

Working Capital Management and Corporate Profitability Relationship: A Literature Review

Daniela Alcaraz-Ochoa[1], Ezequiel Avilés-Ochoa[2] & Ernesto León-Castro[3]

JEL CODES
G30, M00, M10

RECEIVED
22/05/2023

APPROVED
17/01/2025

PUBLISHED
01/01/2026

SECTION
Finance

Disclosures: Author declare no institutional or personal conflicts of interest.

Abstract: Working Capital Management (WCM) refers to the day-to-day financial decisions that ensure the liquidity required for firms' operational activities. Growing scholarly interest in WCM is driven by its expected significant influence on corporate profitability; however, empirical evidence often diverges in terms of analytical approaches and reported findings. This study aims to identify, report, and analyze publications examining the relationship between WCM and profitability. Eighty-one documents were selected from the Scopus and Web of Science databases using a Boolean search strategy for English-language, open-access articles published between 2017 and 2022. An initial upward trend in publication volume is observed, with contributions primarily originating from European, Asian, and North American journals. The most frequently used proxies for the dependent and independent variables are Return on Assets and the Cash Conversion Cycle, respectively, while firm size constitutes the most common control variable. Panel data analysis employing fixed-effects models is prevalent, with negative and statistically significant relationships between WCM and profitability representing the most recurrent findings. This review is limited by the specific eligibility criteria and the databases consulted. Future research could further enrich the WCM literature by developing empirical evidence in understudied countries and industries, considering the proxies and analytical techniques identified herein to enhance comparability across studies.

Keywords: Corporate finance, literature review, profitability, working capital management, Return on Assets, Cash Conversion Cycle.

Suggested citation: Alcaraz-Ochoa, D., Avilés-Ochoa , E., & León-Castro, E. (2026). Working Capital Management and Corporate Profitability Relationship: A Literature Review. *Innovar, 36*(*99*). e107695.
https://doi.org/10.15446/innovar.v36n99.107695

[1] Ph. D. in Administrative Sciences, Autonomous University of Sinaloa, Mexico. Author's Role: Intellectual. Daniela.alcaraz@fca.uas.edu.mx; https://orcid.org/0000-0001-8760-4752

[2] Ph. D. in Social Sciences, Universidad Autónoma de Occidente, Mexico. Author's role: Intellectual. ezequiel.aviles@uadeo.mx; https://orcid.org/0000-0002-1289-9231

[3] Ph. D. in Administrative Sciences, Universidad Católica de la Santísima Concepción, Chile. Author's role: Intellectual. eleon@ucsc.cl; https://orcid.org/0000-0002-0087-2226

Relación entre la gestión del capital de trabajo y la rentabilidad empresarial: una revisión bibliográfica

Resumen: La gestión del capital circulante (WCM, por sus siglas en inglés) se refiere a las decisiones financieras cotidianas que garantizan la liquidez necesaria para las actividades operativas de las empresas. El creciente interés académico por la WCM se debe a su importante influencia prevista en la rentabilidad empresarial; sin embargo, las pruebas empíricas suelen divergir en cuanto a los enfoques analíticos y los resultados comunicados. El objetivo de este estudio es identificar, comunicar y analizar las publicaciones que examinan la relación entre la WCM y la rentabilidad. Se seleccionaron 81 documentos de las bases de datos Scopus y Web of Science utilizando una estrategia de búsqueda booleana para artículos en inglés de acceso abierto publicados entre 2017 y 2022. Se observa una tendencia inicial al alza en el volumen de publicaciones, con contribuciones procedentes principalmente de revistas europeas, asiáticas y norteamericanas. Las variables sustitutivas más utilizadas para las variables dependientes e independientes son el rendimiento de los activos y el ciclo de conversión de efectivo, respectivamente, mientras que el tamaño de la empresa constituye la variable de control más común. Predomina el análisis de datos de panel que emplea modelos de efectos fijos, y los resultados más recurrentes son las relaciones negativas y estadísticamente significativas entre la WCM y la rentabilidad. Esta revisión está limitada por los criterios de elegibilidad específicos y las bases de datos consultadas. Las investigaciones futuras podrían enriquecer aún más la bibliografía sobre la gestión del capital circulante mediante el desarrollo de pruebas empíricas en países e industrias poco estudiados, teniendo en cuenta los indicadores y las técnicas analíticas identificados en el presente documento para mejorar la comparabilidad entre los estudios.

Palabras clave: Finanzas corporativas, revisión bibliográfica, rentabilidad, gestión del capital circulante, rendimiento de los activos, ciclo de conversión de efectivo.

Gestão do capital circulante e relação com a rentabilidade corporativa: uma revisão da literatura

Resumo: A gestão do capital circulante (WCM) refere-se às decisões financeiras diárias que garantem a liquidez necessária para as atividades operacionais das empresas. O crescente interesse académico pela WCM é impulsionado pela sua influência significativa esperada na rentabilidade corporativa; no entanto, as evidências empíricas muitas vezes divergem em termos de abordagens analíticas e resultados relatados. Este estudo tem como objetivo identificar, relatar e analisar publicações que examinam a relação entre WCM e rentabilidade. Oitenta e um documentos foram selecionados das bases de dados Scopus e Web of Science usando uma estratégia de pesquisa booleana para artigos em inglês de acesso aberto publicados entre 2017 e 2022. Observa-se uma tendência inicial de aumento no volume de publicações, com contribuições originárias principalmente de revistas europeias, asiáticas e norte-americanas. Os proxies mais frequentemente utilizados para as variáveis dependentes e independentes são o retorno sobre os ativos e o ciclo de conversão de caixa, respetivamente, enquanto o tamanho da empresa constitui a variável de controlo mais comum. A análise de dados de painel utilizando modelos de efeitos fixos é predominante, com relações negativas e estatisticamente significativas entre WCM e rentabilidade representando os resultados mais recorrentes. Esta revisão é limitada pelos critérios de elegibilidade específicos e pelas bases de dados consultadas. Pesquisas futuras poderiam enriquecer ainda mais a literatura sobre WCM, desenvolvendo evidências empíricas em países e setores pouco estudados, considerando os proxies e as técnicas analíticas identificadas neste artigo para melhorar a comparabilidade entre os estudos.

Palavras-chave: Compra online e recolha na loja (BOPS), comportamento do consumidor, omnicanal, retalhistas, satisfação, qualidade do serviço.

Introduction

Working capital management (WCM) contributes to short-term corporate finance by managing the current assets and liabilities required for a firm's operational activities (Loo & Lau, 2019). It represents a significant proportion of total assets and obligations (Deloof, 2003), demanding considerable time from financial managers in their organizational roles (Raheman & Nasr, 2007). The main objective of WCM is to maintain an optimal level of liquidity, which reflects a firm's operational efficiency (Wassie, 2021). The capacity to meet day-to-day obligations without overinvesting in short-term resources positions WCM as a determinant of profitability maximization and as a driver of competitive advantage (Yousaf & Bris, 2021).

In general, WCM policies follow two directions—conservative or aggressive. A conservative WCM policy seeks to improve profitability through extensive investments in inventories, extended trade credit to customers, and accelerated payments to suppliers. Larger inventories may prevent lost sales due to stockouts and protect firms against price fluctuations (Anton & Afloarei Nucu, 2021). Likewise, extended credit terms for customers may increase sales, particularly for financially constrained buyers (Abuhommous, 2017), thereby becoming a source of competitive advantage (Hameer *et al.*, 2021). At the same time, early payments to suppliers can facilitate discounts and improve bilateral trade relations (Ceylan, 2021). In this regard, prior research supports conservative policies as enhancers of corporate profitability (Gill *et al.*, 2010).

Conversely, an aggressive WCM policy aims to increase profitability by minimizing investments in inventories, tightening commercial credit terms, and extending credit from suppliers (Linh & Mohanlingam, 2018). This approach argues that shorter credit terms reduce costs associated with accounts receivable and default risk (Braimah *et al.*, 2021), while lower inventory levels decrease financing and holding costs (Johnson & Melicher, 2003). Furthermore, extending accounts payable is considered an economical and flexible source of financing (Deloof, 2003). Consistent with this, previous studies have found a negative relationship between WCM and profitability (Eljelly, 2004; García-Teruel & Martínez-Solano, 2007; Raheman & Nasr, 2007; Shin & Soenen, 1998; Wang, 2002). Additionally, a nonlinear relationship has been proposed, suggesting the existence of an optimal level of working capital that maximizes financial performance (Baños-Caballero *et al.*, 2012), often characterized as concave, quadratic, or inverted U-shaped (Aktas *et al.*, 2015; Baños-Caballero *et al.*, 2014; Ben-Nasr, 2016).

Previous WCM literature indicates that analyses frequently employ diverse proxies for key variables and various analytical techniques, resulting in contradictory empirical evidence (Anton & Afloarei Nucu, 2021; Ahangar, 2020; Jaworski & Czerwonka, 2021; Singh & Kumar, 2014). This study aims to contribute to WCM research by conducting a literature review that evaluates the collective evidence and thereby strengthens the state of the art (Snyder, 2019). A Boolean search was applied and followed by a systematic eligibility assessment, leading to the selection of 81 documents from the Scopus and Web of Science (WoS) databases for the period 2017-2022. The objective is to identify, report, and analyze

similarities and differences in the proxies used as dependent, independent, and control variables in WCM–profitability research, as well as the analytical techniques employed and the findings reported. As no previous literature reviews focusing on the WCM–profitability relationship during this period were identified, this study provides a comprehensive analysis of recent scientific production to support and guide future research (Prasad *et al.*, 2019).

The results reveal an upward trend in publication volume throughout most of the analyzed period, with the exception of the decline from 2021 to 2022. The samples analyzed primarily comprise Asian, European, and American companies, and the journals with the highest number of publications are based in Canada, South Korea, Switzerland, Ukraine, the United Kingdom, and the United States. Regarding the proxies used in WCM–profitability studies, Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q are the most common measures of profitability, while the Cash Conversion Cycle (CCC) and its components—Days Sales Outstanding (DSO), Days Inventory Outstanding (DIO), and Days Payables Outstanding (DPO)—are the most frequent WCM proxies. Size, leverage, and growth are the most commonly used control variables. Most research samples are database-derived and meet the conditions for panel data, with fixed-effects models being the most frequently used analytical technique. The most recurrent finding is a negative and statistically significant relationship between WCM and profitability.

After this introductory section, the paper proceeds with the methodology. The following section reports the results of the literature review, which are then discussed in the subsequent section. The paper

concludes with a final section outlining the conclusions, limitations, and recommendations for future research.

Methodology

In order to identify publications that contribute to the analysis of the WCM–profitability relationship, a search was conducted in the Scopus and the WoS databases, as both are considered high-quality publication platforms (Tijjani *et al.*, 2021). Previous literature reviews have also selected Scopus and WoS to assess the state of research on financial topics (Muhmad & Muhamad, 2021; Vaz da Fonseca *et al.*, 2020). Eligibility criteria were applied following the PRISMA (2021) guidelines. Accordingly, a Boolean search strategy was used: TITLE = ["Working capital management" OR "Liquidity" OR "Net working capital" OR "Cash conversion cycle" OR "Net trade cycle"] AND [Profitability OR Performance].

The search was further refined to include only articles written in English, given that it is the predominant language of publication in both databases. Another selection criterion was the inclusion of Open Access documents because of their accessibility and ease of dissemination. Since the goal was to identify recent and dominant trends that have gained strength in the past few years and that can guide researchers in the field (Valcanover *et al.*, 2020), the search focused on empirical studies published between 2017 and 2022—a timeframe not previously used in earlier literature reviews (Jaworski & Czerwonka, 2021; Kayani *et al.*, 2019).

Figure 1 presents the Boolean search conducted under the eligibility criteria described above, yielding a total of 203 documents: 120 from Scopus and 83 from WoS. The first exclusion step consisted of identifying duplicate articles; 62 documents were found to be duplicated across both databases, leaving 141 documents for screening.

The screening process involved a preliminary analysis through abstract examination. In this phase, 49 articles were excluded for not focusing on the empirical analysis of the WCM–performance relationship. Additionally, 11 articles were excluded because they analyzed firms in the financial sector—such as banking, finance, insurance, and leasing—due to the specific nature of their activities, which typically do not align with WCM practices observed in other sectors. This exclusion criterion has also been used by previous researchers in constructing their samples (Ajike *et al.*, 2022; Braimah *et al.*, 2021; Li *et al.*, 2020; Mardones, 2021; Nguyen *et al.*, 2020; Tingbani *et al.*, 2020; Wang *et al.*, 2020; Yilmaz & Acar, 2022). The screening process resulted in a final selection of 81 documents from both databases, which were included in this literature review.

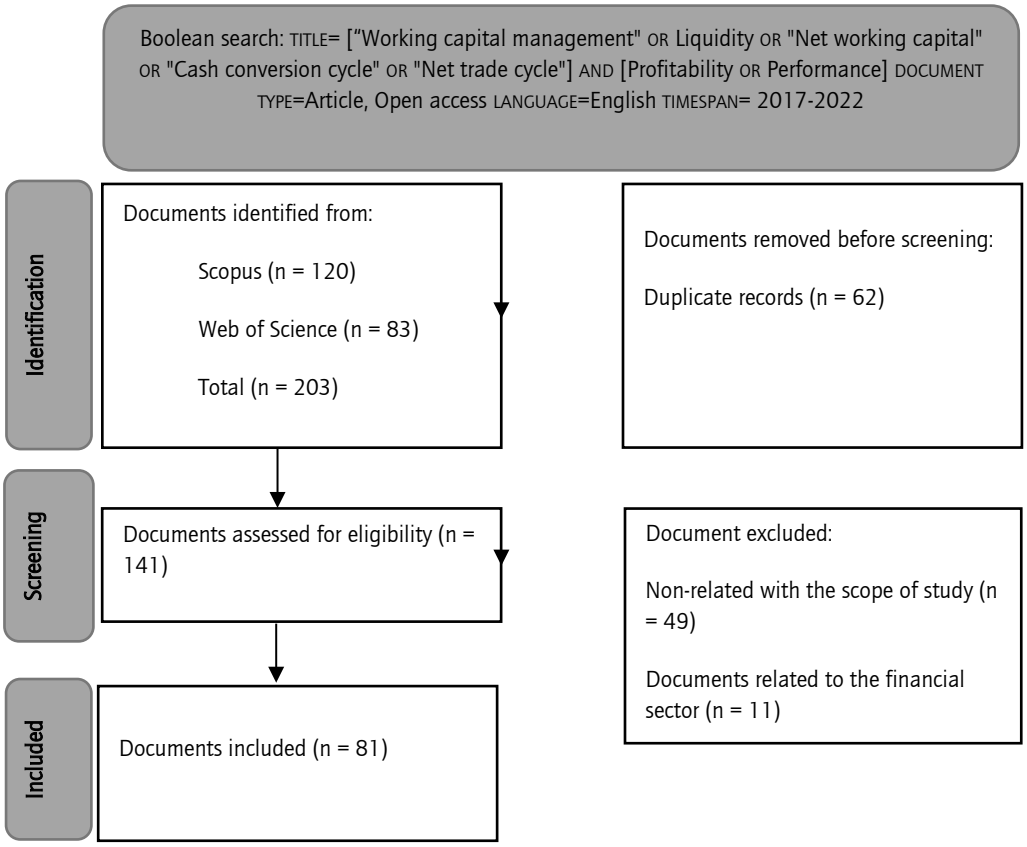

Figure 1. Diagram of phases for SLR based on PRISMA (2021). Source: authors.

The analysis of publication frequency per year in figure 2 shows the volume of studies published between 2017 and 2022. A sustained increase is observed during the first five years. The most notable rise in documents related to the WCM–profitability relationship occurs between 2020 and 2021, followed by a decrease in publication volume in 2022.

Regarding the origin of the research, figure 3 indicates that samples are drawn primarily from Asian countries, including India, Indonesia, Malaysia, Pakistan, and Vietnam. Studies using data from multiple countries mainly focus on Asian countries (Ahmad *et al.*, 2022; Yilmaz & Acar, 2022), European countries (Boţoc & Anton, 2017; Demiraj *et al.*, 2022; Lefebvre, 2020; Mazanec, 2022, 2022a; Vuković & Jakšić, 2019), both European and Asian countries (Morshed, 2020), Asian, European, and American countries (Reyad *et al.*, 2022), and Latin American countries (Mardones, 2021).

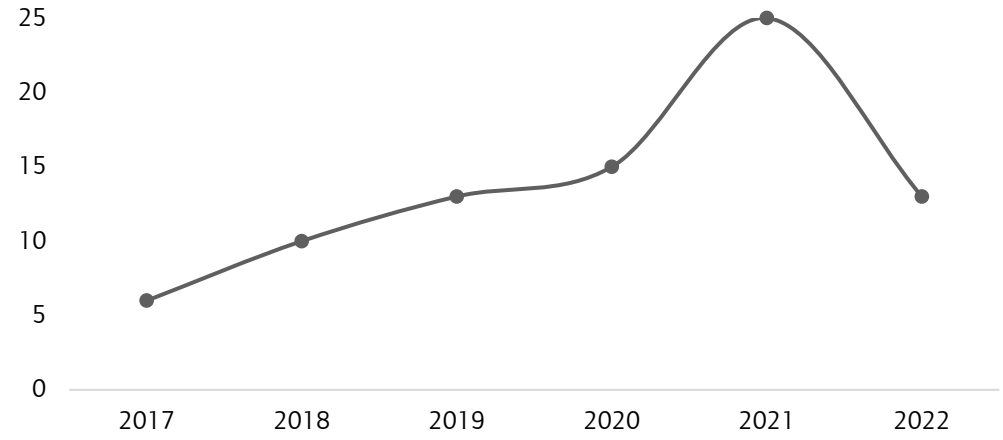

Figure 2. Frequency of publications on WCM-profitability relationship (2017-2022). Source: authors.

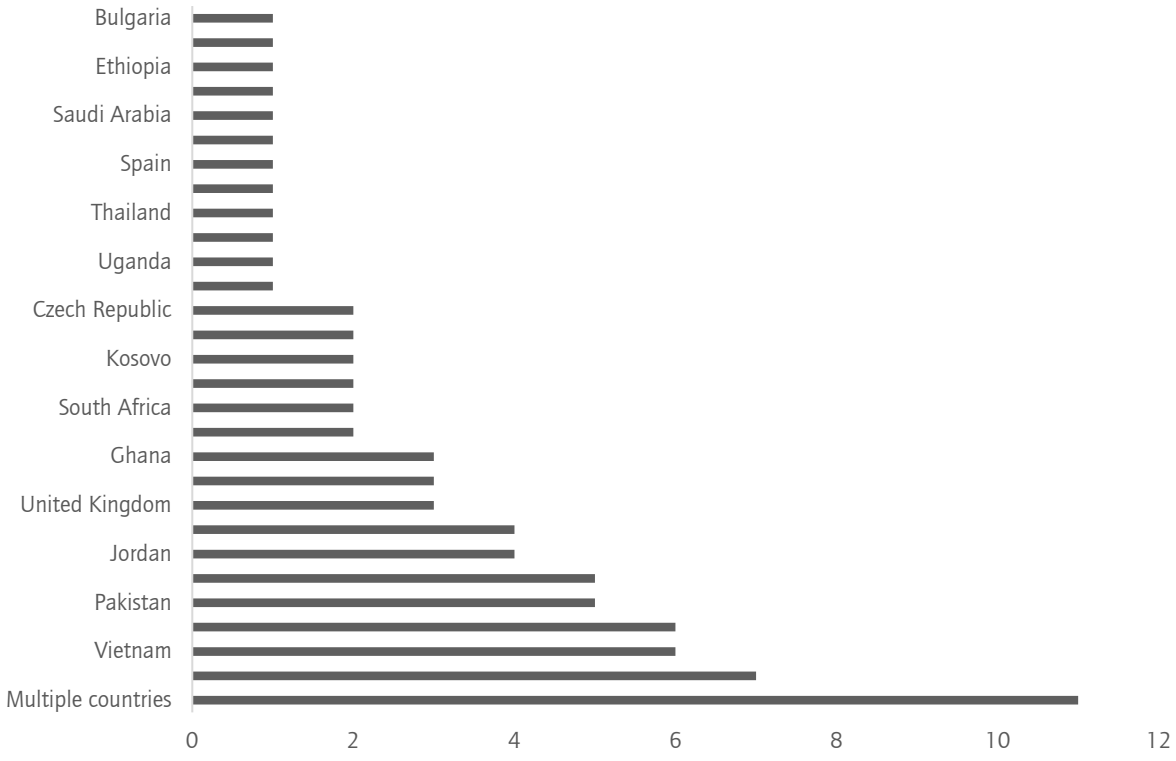

Figure 3. Countries of origin of the companies analyzed in the sample. Source: authors.

The analysis by journal and country of origin shows that most journals are based in European, Asian, and North American countries (table 1). The journal with the highest number of publications is Accounting, a Canadian journal focused on theoretical and applied accounting and financial topics. Cogent Business & Management and Cogent Economics & Finance (both from the United Kingdom), along with Investment Management and Financial Innovations (Ukraine), follow with four publications each related to the WCM–profitability relationship. The Journal of Asian Finance, Economics and Business

(South Korea) is next, followed by Mathematics (Switzerland), and SAGE Open (United States). All of these journals are characterized by the use of peer-review processes.

Table 1. Country of origin and journals where the studies were published.

Country	Journal	Publications
Brazil	Independent Journal of Management & Production	1
Canada	Accounting	6
	Management Science Letters	2
	International Journal of Financial Research	1
	Journal of Politics and Law	1
Croatia	Zagreb International Review of Economics & Business	2
	Management-Journal of Contemporary Management Issues	1
	Zbornik Radova Ekonomskog Fakultet au Rijeci	1
Czech Republic	Agricultural Economics-Zemedelska Ekonomika	1
	Prague Economic Papers	1
Germany	Foundations of Management	1
	Journal of Management Control	1
Greece	WSEAS Transactions on Environment and Development	1
	WSEAS Transactions on Business and Economics	1
India	International Journal of Engineering and Advanced Technology	2
	Humanities and Social Sciences Reviews	1
	Journal of Mechanics of Continua and Mathematical Sciences	1
Italy	Academic Journal of Interdisciplinary Studies	1
	European Journal of Sustainable Development	1
Lithuania	Business: Theory and Practice	1
	Journal of Business Economics and Management	2
Malaysia	Asian Journal of Business and Accounting	1
Netherlands	Heliyon	1
Pakistan	Asian Economic and Financial Review	1
Poland	Journal of Management and Business Administration. Central Europe	1
	Polish Journal of Management Studies	2
	Central European Management Journal	1
Romania	Quality - Access to Success	1
Russia	Finance: Theory and Practice	1

Country	Journal	Publications
Serbia	Ekonomika Poljoprivreda-Economics of Agriculture	2
	Strategic Management	1
South Korea	Journal of Asian Finance Economics and Business	3
Spain	Economics and Business Letters	1
	Estudios de Economía Aplicada	1
Switzerland	International Journal of Banking, Accounting and Finance	2
	Journal of Risk and Financial Management	1
	Mathematics	3
	Risks	2
	Sustainability	2
Türkiye	Journal of economics and administrative sciences	1
Ukraine	Investment Management and Financial Innovations	4
	Problems and Perspectives in Management	1
United Kingdom	Cogent Economics & Finance	4
	Cogent Business & Management	4
	Asian Journal of Accounting Research	1
	Economic Research-Ekonomska Istrazivanja	1
	Education Research International	1
	Journal of Business and Retail Management Research	1
	Journal of Small Business Management	1
	Marine Policy	1
United States	SAGE Open	3
	Humanities & Social Sciences Communications	1

Source: authors.

Results

The results section contains three subsections. The first reports the variables considered in the selected documents for analyzing the WCM–profitability relationship, including the dependent, independent, and control variables. The second provides a synthesis of the data sources and analytical techniques employed. The third subsection presents the most frequent findings regarding the WCM–profitability relationship.

Variables considered for the WCM–profitability relationship

Since the selection criteria for this literature review required documents analyzing the WCM–profitability relationship, researchers generally conducted their analyses using samples composed of listed companies from one or multiple countries during a defined period. The data typically originate from financial statements and market reports obtained from databases such as Amadeus, Albertina, Compustat, DataStream, Eikon, Orbis, Osiris, and ProwessIQ. The proxies used as dependent, independent, and control variables in these analyses are described below.

Dependent variables

Table 2 presents the proxies considered as dependent variables and their corresponding estimations. These proxies can be classified as related to book value or economic value. ROA is the most frequently used book-value profitability proxy and is commonly measured as the accounting return on total assets. ROE is also widely employed in the literature as an indicator of accounting profitability, representing the return generated on shareholders' equity.

Regarding economic value proxies, Tobin's Q stands out as a measure of the market value of listed companies. It is used because authors consider it to reflect the firm's long-term future performance (Nguyen *et al.*, 2020). Other book-value variables identified include Return on Investment (ROI), typically estimated as *Net income/Total assets* (Anton & Afloarei Nucu, 2021; Wassie, 2021); Return on Invested Capital (ROIC), measured as *Net profit before tax/Investments* (Ismail *et al.*, 2019); and Gross Profit Margin, estimated as *Gross profit/Total assets* (Basyith *et al.*, 2021). In terms of economic performance measures, the use of earnings per share is also noted (Obeidat *et al.*, 2021).

Table 2. Dependent variables for the WCM–profitability analysis.

Variable and description	Source
Return on Assets (ROA)	
$\frac{Net\ income}{Total\ assets}$	Ahmad et al. (2022); Ahmeti et al. (2022); Anton et al. (2021); Ayoush et al. (2021); Baig et al. (2021); Basyith et al. (2021); Jaworski and Czerwonka (2022); Korent and Orsag (2018); Kusuma and Bachtiar (2018); Mandipa and Sibindi (2022); Nastiti et al. (2019); Pham et al. (2020); Reyad et al. (2022); Soda et al. (2022).
$\frac{Earnings\ Before\ Interest\ and\ Taxes}{Total\ assets}$	Demiraj et al. (2022); Lyngstadaas (2020); Mazanec (2022, 2022a); Rey-Ares et al. (2021); Yousaf et al. (2021).
$\frac{Net\ profit}{Total\ assets}$	Batrancea (2021); Ceylan (2021); Wang et al. (2020).

Variable and description	Source
Return on Equity (ROE)	
$\frac{Net\ income}{Equity}$	Mardones (2021); Li et al. (2020); Mandipa and Sibindi (2022); Shakatreh (2021); Linh and Mohanlingam (2018); Loo and Lau (2019); Obeidat et al. (2021); Rey-Ares et al. (2021).
$\frac{Net\ income - preferred\ dividends}{Equity}$	Ayoush et al. (2021).
$\frac{Net\ profit\ before\ tax}{Shareholders'\ equity}$	Hung and Dinh (2022); Ismail et al. (2019).
Tobin's Q	
$\frac{Total\ liabilities + stock\ capitalization}{Total\ assets}$ *(or similar)*	Afrifa and Tingbani (2018); Mardones (2021); Perera and Priyashantha (2018); Simon *et al*. (2018)
$\frac{Price\ per\ share * total\ of\ shares}{Total\ assets}$ *(or similar)*	Akbar *et al*. (2021), Loo and Lau (2019).
	Ahmad *et al*. (2022)
$\frac{Market\ value\ of\ equity\ book\ value\ of}{Book\ value\ of\ total\ assets}$	

Source: authors.

Independent variables

The most frequently used independent variables related to WCM in the selected literature are presented in table 3. Days Sales Outstanding (DSO), also referred to as the trade receivables collection period or days accounts receivable, represents the number of days granted to customers from the date of sale until payment is received (Braimah *et al*., 2021). It is directly associated with a firm's credit and collection policies. Days Inventories Outstanding (DIO) captures the number of days inventories are held before being sold (Braimah *et al*., 2021). Days Payables Outstanding (DPO) reflects the number of days from the receipt of goods from suppliers to the date of payment (Braimah *et al*., 2021).

These proxies are used to estimate the Cash Conversion Cycle (CCC), the most frequently employed WCM measure in the literature. The CCC assesses the operational velocity of a company by capturing the net time interval between the purchase of productive resources and the final recovery of cash from product sales (Richards & Laughlin, 1980).

Table 3. Independent variables for the WCM–profitability analysis.

Variable and description	Source
Days sales outstanding (DSO) $\left(\frac{Accounts\ receivables}{Sales}\right) x\ 365$ $\frac{Accounts\ receivables\ x\ 365}{Cost\ of\ sales}$	Ahmeti et al. (2022); Basyith et al. (2021); Ceylan (2021); Demiraj et al. (2022); Gonçalves et al. (2018); Hussain et al. (2021b); Kartikasary et al. (2021); Loo and Lau (2019); Mandipa and Sibindi (2022); Mazanec (2022, 2022a); Pham et al. (2020); Perera and Priyashantha (2018); Reyad et al. (2022); Sameni and Fakour (2019); Simon et al. (2018); Soda et al. (2022); Wassie (2021). Yousaf et al. (2021).
Days inventories outstanding (DIO) $\left(\frac{Inventories}{Cost\ of\ sales}\right) x\ 365$ (or similar)	Ahmeti et al. (2022); Basyith et al. (2021); Braimah et al. (2021); Ceylan (2021); Demiraj et al. (2022); Gołaś (2020); Gonçalves et al. (2018); Hung and Dinh (2022); Kartikasary et al. (2021); Linh and Mohanlingam (2018); Loo and Lau (2019); Mandipa and Sibindi (2022); Mazanec (2022, 2022a); Pham et al. (2020); Perera Priyashantha (2018); Phuong and Hung (2020); Priyashantha (2018); Reyad et al. (2022); Sameni and Fakour (2019); Simon et al. (2018); Soda et al. (2022); Yousaf et al. (2021).
Days payable outstanding (DPO) $\left(\frac{Accounts\ payables}{total\ purchasing}\right) x\ 365$ (or similar)	Ahmeti et al. (2022); Basyith et al. (2021); Braimah et al. (2021); Ceylan (2021); Demiraj et al. (2022); Gołaś (2020); Gonçalves et al. (2018); Hussain et al. (2021b); Kartikasary et al. (2021); Linh and Mohanlingam (2018); Loo and Lau (2019); Mandipa and Sibindi (2022); Othuon et al. (2021); Perera and Priyashantha (2018); Pham et al. (2020); Phuong and Hung (2020); Sameni and Fakour (2019); Simon et al. (2018); Soda et al. (2022); Yousaf et al. (2021).
Cash Conversion Cycle (CCC) $(Days\ sales\ outstandind$ $+ Days\ inventories\ outstanding$ $- Days\ payable\ outstanding)$	Ahmad et al. (2022); Ahmeti et al. (2022); Ajike et al. (2022); Ali (2021b); Braimah et al. (2021); Demiraj et al. (2022); Hussain et al. (2021b); Jaworski and Czerwonka (2022); Gołaś (2020); Gonçalves et al. (2018); Kasozi (2017); Linh and Mohanlingam (2018); Loo and Lau (2019); Mandipa and Sibindi (2022); Pham et al. (2020); Phuong and Hung (2020); Reyad et al. (2002); Sameni and Fakour (2019); Simon et al. (2018); Soda et al. (2022).

Source: authors.

Other proxies considered in the literature as independent variables include the current ratio, quick ratio, and cash ratio. The current ratio—also known as the current liquidity or trading ratio—indicates the extent to which a company can meet its short-term liabilities using its current assets (Shakatreh, 2021), commonly estimated as current assets to current liabilities (Akbar *et al.*, 2021; Ayoush *et al.*, 2021; Li *et al.*, 2020; Othuon *et al.*, 2021; Vuković & Jakšić, 2019). The quick ratio is measured as current assets - inventories/current liabilities (Ayoush *et al.*, 2021), while the cash ratio is estimated as net inventories + receivables/current liabilities (Loo & Lau, 2019).

Control variables

Table 4 presents the most frequently used control variables in the documents analyzed. Size stands out in the WCM–profitability literature and is commonly measured using total assets or total sales. Other proxies for firm size include the total number of active members or customers (Othuon *et al.*, 2021), the total number of employees (Rey-Ares *et al.*, 2021), and the natural logarithm of market value (Kowsari & Shorvarzi, 2017).

Leverage (also expressed as the debt–equity ratio or financial debt ratio) reflects a company's level of indebtedness (Afrifa & Tingbani, 2018). Other common estimations of leverage include Total debt⁄Capital (Prempeh & Peprah-Amankona, 2020), Non-current liabilities⁄Capital (Perera & Priyashantha, 2018), and Non-current liabilities + Loans⁄Total assets (Boţoc & Anton, 2017). Growth is also used as a control variable, referring to a firm's expansion opportunities, and is typically measured through increases in sales, assets, or employees (Li *et al.*, 2020; Lyngstadaas, 2020).

Table 4. Control variables for the WCM–profitability analysis.

Variable and description	Source
Size $Natural\ logarithm\ of\ total\ assets$ $Natural\ logarithm\ of\ sales\ (or\ total\ income)$	Afrifa and Tingbani (2018); Ahmeti et al. (2022); Ajike et al. (2022); Ayoush et al. (2021); Basyith et al. (2021); Braimah et al. (2021); Ceylan (2021); Dalci et al. (2019); Demiraj et al. (2022); Mardones (2021); Hung and Dinh (2022); Hussain et al. (2021b); Jaworski and Czerwonka (2022); Korent and Orsag (2018); Li et al. (2020); Loo and Lau (2019); Mandipa and Sibindi (2022); Nastiti et al. (2019); Nguyen et al. (2020); Obeidat et al. (2021); Phuong and Hung (2020); Prempeh and Peprah-Amankona (2020); Reyad et al. (2022); Roy et al. (2019); Soda et al. (2022); Soukhakian and Khodakarami (2019); Yameen et al. (2019). Ahmad et al. (2022); Akbar et al. (2021); Anton and Afloarei Nucu (2020); Högerle et al. (2020); Kusuma and Bachtiar (2018); Linh and Mohanlingam (2018); Nguyen and Nguyen (2018); Perera and Priyashantha (2018); Simon et al. (2017); Simon et al. (2018); Yousaf and Bris (2021); Yousaf et al. (2021).
Leverage $\frac{Total\ liabilities}{Total\ assets}$ $\frac{Total\ debt}{Total\ equity}$	Afrifa and Tingbani, (2018); Ahmeti et al.(2022); Ajike et al. (2022); Anton and Afloarei Nucu (2020); Basyith et al. (2021); Braimah et al. (2021); Ceylan (2021); Demiraj et al. (2022); Högerle et al. (2020); Hung and Dinh (2022); Hussain et al. (2021b); Jaworski and Czerwonka (2022); Kasozi (2017); Korent and Orsag (2018); Kowsari and Shorvarzi (2017); Kusuma and Bachtiar (2018); Lefebvre (2020); Linh and Mohanlingam (2018); Lyngstadaas (2020); Nastiti et al. (2019); Nguyen and Nguyen (2018); Othuon et al. (2021); Phuong and Hung (2020); Reyad et al. (2022); Rey-Ares et al. (2021); Simon et al. (2017); Simon et al. (2018); Soda et al. (2022); Soukhakian and Khodakarami (2019); Yousaf and Bris (2021); Yousaf et al. (2021). Ahmad et al. (2022).
Growth $\frac{Sales\ current\ year - Sales\ previous\ year}{Sales\ previous\ year}$ (or similar)	Ahmad et al. (2022); Braimah et al. (2021); Demiraj et al. (2022); Gołaś (2020); Hung and Dinh (2022); Högerle et al. (2020); Kasozi (2017); Nastiti et al. (2019); Othuon et al. (2021); Reyad et al. (2022); Sameni and Fakour (2019); Simon et al. (2017); Simon et al. (2018).

Source: authors.

Other control variables considered in the literature include age (Ajike *et al.*, 2022; Basyith *et al.*, 2021; Gołaś, 2020), sector or industry (Högerle *et al.*, 2020), and the cash ratio (Anton & Afloarei Nucu, 2020; Braimah *et al.*, 2021; Lefebvre, 2020). Additional proxies related to market value and macroeconomic conditions include the book-to-market ratio (Loo & Lau, 2019) and Gross Domestic Product (GDP) (Ahmad *et al.*, 2022; Dalci *et al.*, 2019; Jaworski & Czerwonka, 2022), respectively.

In order to present the most frequently employed variables across studies, Table 5 provides a synthesis of the most common dependent, independent, and control variables used in analyses of the WCM–profitability relationship. It is observed that some researchers examine more than one proxy for each variable of interest (Linh & Mohanlingam, 2018; Loo & Lau, 2019; Lyngstadaas, 2020). As noted above, the estimation of these variables can vary from one study to another.

Table 5. Most frequent variables for the WCM–profitability analysis.

No.	Author(s)	Dependent variables				Independent variables						Control variables			
		ROA	ROE	Tobin's Q	Other	CCC	DSO	DIO	DPO	CR	Other	Size	LEV	GRO	Other
1	Afrifa and Tingbani (2018)	X		X		X						X	X	X	X
2	Ahmad *et al.* (2022)	X		X		X					X	X	X	X	X
3	Akbar *et al.* (2021)		X	X								X			X
4	Ali (2021a)				X					X					
5	Ali (2021b)				X	X				X					
6	Ali *et al.* (2019)	X	X							X	X				
7	Anton and Afloarei Nucu (2021)	X			X						X	X	X	X	X
8	Ahmeti *et al.* (2022)	X				X	X	X	X			X	X	X	X
9	Ajike *et al.* (2022)				X	X					X	X	X		X
10	Ayoush *et al*. (2021)	X	X							X	X	X			
11	Baig *et al*. (2021)	X				X	X	X	X	X	X				
12	Basyith *et al*. (2021)	X			X	X	X	X	X	X	X	X	X		X
13	Batrancea (2021)	X			X					X	X				
14	Boțoc and Anton (2017)	X			X						X		X	X	X
15	Braimah *et al*. (2021)	X			X	X	X	X	X			X	X	X	X
16	Čavlin *et al*. (2021)	X	X		X					X	X				
17	Ceylan (2021)	X				X	X	X	X			X	X		X
18	Dalci *et al*. (2019)	X				X						X	X	X	X

No.	Author(s)	Dependent variables				Independent variables						Control variables			
		ROA	ROE	Tobin's Q	Other	CCC	DSO	DIO	DPO	CR	Other	Size	LEV	GRO	Other
19	Daryanto *et al*. (2018)	X								X					
20	Dave *et al*. (2019)	X				X					X				
21	Demiraj *et al.* (2022)	X				X	X	X	X			X	X	X	X
22	Gołaś (2020)	X				X	X	X	X					X	X
23	Gonçalves *et al*. (2018)	X			X	X	X	X	X						X
24	Gorondutse *et al*. (2017)	X	X		X	X	X	X	X			X	X	X	
25	Hameer *et al.* (2021)	X					X	X	X			X		X	
26	Högerle *et al*. (2020)				X	X	X	X	X			X	X	X	X
27	Hung and Dinh (2022)		X			X	X	X	X			X	X	X	X
28	Hussain *et al.* (2021a)	X	X			X						X	X		X
29	Hussain *et al.* (2021b)				X	X	X	X	X			X	X		X
30	Ismail *et al.* (2019)	X	X		X	X				X	X				
31	Jaworski and Czerwonka (2022)	X				X				X	X	X	X		X
32	Kabuye *et al.* (2019)		X		X						X				
33	Kartikasary *et al.* (2021)				X		X	X	X						
34	Kasozi (2017)	X				X	X	X	X			X	X	X	
35	Korent and Orsag (2018)	X									X	X	X	X	X
36	Kowsari and Shorvarzi (2017)	X										X	X		X

No.	Author(s)	Dependent variables				Independent variables						Control variables			
		ROA	ROE	Tobin's Q	Other	CCC	DSO	DIO	DPO	CR	Other	Size	LEV	GRO	Other
37	Kusuma and Bachtiar (2018)	X				X	X	X	X	X	X	X	X		X
38	Lefebvre (2020)	X				X					X		X	X	X
39	Li *et al.* (2020)		X							X	X	X		X	X
40	Linh and Mohanlingam (2018)	X	X			X	X	X	X			X	X		
41	Loo and Lau (2019)	X	X	X	X	X	X	X	X	X	X	X		X	X
42	Lyngstadaas (2020)	X			X		X	X	X		X		X	X	X
43	Mandipa and Sibindi (2022)	X	X		X	X	X	X	X			X	X		X
44	Mardones (2021)		X	X							X	X	X	X	X
45	Mazanec (2022)	X				X	X	X	X	X	X	X			
46	Mazanec (2022a)	X				X	X	X	X	X	X	X			
47	Mazreku *et al.* (2020)	X								X					
48	Morshed (2020)														
49	Nastiti *et al*. (2019)	X									X	X	X	X	X
50	Nguyen and Nguyen (2018)	X			X	X	X	X	X			X	X		X
51	Nguyen (2020)	X			X	X	X	X	X						X
52	Nguyen *et al.* (2020)	X		X		X	X	X	X			X	X	X	X
53	Nobanee (2018)	X													
54	Obeidat *et al*. (2021)		X		X	X				X		X			X

No.	Author(s)	Dependent variables				Independent variables						Control variables			
		ROA	ROE	Tobin's Q	Other	CCC	DSO	DIO	DPO	CR	Other	Size	LEV	GRO	Other
55	Osho *et al.* (2021)				X						X				
56	Otekunrin *et al*. (2021)				X	X	X	X	X			X	X	X	X
57	Othuon *et al.* (2021)	X			X				X	X		X	X	X	X
58	Perera and Priyashantha (2018)			X	X	X	X	X	X	X		X	X		X
59	Pham *et al.* (2020)	X				X	X	X	X	X	X				
60	Phuong and Hung (2020)	X				X	X	X	X			X	X		X
61	Prempeh and Peprah-Amankona (2020)	X				X						X	X		X
62	Ramlan *et al.* (2019)	X			X					X	X				
63	Raykov (2017)				X					X					
64	Respati *et al.* (2022)		X			X						X	X		X
65	Reyad *et al.* (2022)	X				X	X	X	X			X	X	X	
66	Rey-Ares *et al.* (2021)	X	X			X	X	X	X			X	X		X
67	Roy *et al.* (2019)	X									X	X			X
68	Sameni and Fakour (2019)				X	X	X	X	X					X	X
69	Shakatreh (2021)	X	X							X	X				
70	Simon *et al.* (2017)	X	X			X					X	X	X	X	
71	Simon *et al.* (2018)	X		X		X	X	X	X		X	X	X	X	
72	Soda *et al.* (2022)	X				X	X	X	X			X	X		

No.	Author(s)	Dependent variables				Independent variables						Control variables			
		ROA	ROE	Tobin's Q	Other	CCC	DSO	DIO	DPO	CR	Other	Size	LEV	GRO	Other
73	Soukhakian and Khodakarami (2019)	X			X	X						X	X		X
74	Tingbani *et al.* (2020)	X		X		X					X		X	X	X
75	Vuković and Jakšić (2019)	X								X	X				
76	Wang *et al.* (2020)	X													X
77	Wassie (2021)	X			X	X	X	X	X						
78	Yameen *et al.* (2019)	X								X	X	X	X		X
79	Yilmaz and Acar (2022)				X	X	X	X	X			X		X	X
80	Yousaf and Bris (2021)	X	X								X	X	X		X
81	Yousaf *et al.* (2021)	X				X	X	X	X			X	X		X
	Total	**61**	**20**	**9**	**32**	**50**	**37**	**37**	**38**	**26**	**35**	**51**	**45**	**30**	**49**

ROA = Return on Assets; ROE = Return on Equity; CCC = Cash Conversion Cycle; DSO = Days Sales Outstanding; DIO = Days Inventory Outstanding; DPO = Days Payable Outstanding; CR = Current Ratio; Size = company size; LEV = Leverage; GRO = Growth.

Source: authors.

Data and analysis techniques

As noted above, the publications analyzed generally use data obtained from major databases, most often relying on broad samples that include companies from all sectors and industries (typically excluding the financial sector). However, studies focusing on specific industries or sectors are also represented in the literature, such as agriculture (Linh & Mohanlingam, 2018; Otekunrin *et al.*, 2021), manufacturing (Kasozi, 2017; Lyngstadaas, 2020; Osho, 2021), and services (Korent & Orsag, 2018) (table 6).

Table 6. Industry or sector analyzed.

Industry/Sector	Authors
General	Afrifa and Tingbani (2018); Ahmad *et al.* (2022); Akbar *et al.* (2021); Ali *et al.* (2019); Anton and Afloarei Nucu (2021); Ajike *et al.* (2022); Baig *et al.* (2021); Basyith *et al.* (2021); Boțoc and Anton (2017); Braimah *et al.* (2021); Dalci *et al.* (2019); Gonçalves *et al.* (2018); Gorondutse *et al.* (2017); Högerle *et al.* (2020); Hung and Dinh (2022); Jaworski and Czerwonka (2022); Kowsari and Shorvarzi (2017); Kusuma and Bachtiar (2018); Li *et al.* (2020); Loo and Lau (2019); Mardones (2021); Morshed (2020); Nguyen and Nguyen (2018); Nguyen (2020); Nguyen *et al.* (2020); Perera and Priyashantha (2018); Phuong and Hung (2020); Raykov (2017); Reyad et al. (2022), Sameni & Fakour (2019), Simon et al. (2017), Simon *et al.* (2018); Tingbani *et al.* (2020); Wang *et al.* (2020); Wassie (2021); Yilmaz and Acar (2022); Yousaf and Bris (2021); Yousaf *et al.* (2021).
Food, livestock, and agriculture	Čavlin *et al.* (2021); Gołaś (2020); Linh and Mohanlingam (2018); Otekunrin *et al.* (2021); Othuon *et al.* (2021); Rey-Ares *et al.* (2021); Vuković and Jakšić (2019).
Industrial, manufacturing, construction, steel, automotive, chemical, energy	Ali (2021a), Ahmeti *et al.* (2022); Ayoush *et al.* (2021); Ceylan (2021); Dave *et al.* (2019); Demiraj *et al.* (2022); Hameer *et al.* (2021); Hussain *et al.* (2021a); Hussain *et al.* (2021b); Ismail *et al.* (2019); Kasozi (2017); Lyngstadaas (2020); Nastiti *et al.* (2019); Nobanee (2018); Obeidat *et al.* (2021); Osho *et al.* (2021); Pham *et al.* (2020); Prempeh and Peprah-Amankona (2020); Ramlan *et al.* (2019); Respati *et al.* (2022); Shakatreh (2021); Soda *et al.* (2022); Soukhakian and Khodakarami (2019).
Healthcare, real estate, retail, services, transportation	Ali (2021b); Batrancea (2021); Daryanto *et al.* (2018); Kabuye *et al.* (2019); Kartikasary *et al.* (2021); Korent and Orsag (2018); Lefebvre (2020); Mandipa and Sibindi (2022); Mazanec (2022, 2022a); Yameen *et al.* (2019).

Source: authors.

The data collected are mostly quarterly or annual observations from the same companies over a period of time, which generally meet the characteristics of panel (or longitudinal) data (Stock & Watson, 2012). For the analysis, some studies are limited to descriptive statistics and the estimation of correlation coefficients (Ali, 2021a, 2021b); however, most studies also examine causal relationships using multivariate or multiple regression analysis (table 7).

Table 7. Analysis techniques employed.

Panel data regression analysis (fixed-effect models) Afrifa and Tingbani (2018); Anton and Afloarei Nucu (2020); Ayoush *et al.* (2021); Boţoc and Anton (2017); Dalci *et al.* (2019); Demiraj *et al.* (2022); Hung and Dinh (2022); Hussain *et al.* (2021a); (2021b); Högerle *et al.* (2020); Kasozi (2017); Lefebvre (2020); Loo and Lau (2019); Lyngstadaas (2020); Mandipa and Sibindi (2022); Mardones (2021); Mazreku *et al.* (2020); Nastiti *et al.* (2019); Nguyen and Nguyen (2018); Respati *et al.* (2022); Reyad *et al.* (2022); Simon *et al.* (2017); Simon *et al.* (2018); Soda *et al.* (2022); Yameen *et al.* (2019).
Panel data regression analysis (random-effect models) Ajike *et al.* (2022); Boţoc and Anton (2017); Dalci *et al.* (2019); Demiraj *et al.* (2022); Hussain *et al.* (2021a, 2021b), Högerle *et al.* (2020); Kasozi (2017); Mazreku *et al.* (2020); Nastiti *et al.* (2019); Nguyen and Nguyen (2018); Reyad *et al.* (2022); Simon *et al.* (2018); Yameen *et al.* (2019).
Ordinary Least Squares (OLS) Ahmeti *et al.* (2022); Anton and Afloarei Nucu (2021); Basyith *et al.* (2021); Boţoc and Anton (2017); Kowsari and Shorvarzi (2017); Nguyen *et al.* (2020); Perera and Priyashantha (2018); Soukhakian and Khodakarami (2019); Raykov (2017).
Pooled least squares (Pooled OLS) Dalci *et al.* (2019); Gorondutse *et al.* (2017); Hameer *et al.* (2021); Hussain *et al.* (2021a, 2021b); Kasozi (2017); Loo and Lau (2019).
Generalized Method of Moments (GMM) Ahmad *et al.* (2022); Batrancea (2021); Braimah *et al.* (2021); Gołaś (2020); Hussain *et al.* (2021b); Nobanee (2018); Rey-Ares *et al.* (2021); Tingbani *et al.* (2020).
Two-step generalized method of moments (Two step GMM) Akbar *et al.* (2021); Boţoc and Anton (2017); Ceylan (2021); Hussain *et al.* (2021a, 2021b); Reyad *et al.* (2022); Yousaf and Bris (2021).

Source: authors.

Panel data regression is the most frequently used analysis technique, most commonly through fixed-effects models, followed by the use of random-effects models. The decision regarding which type of model to employ is typically based on specification tests, with the Hausman test (1978) being the most widely applied in these studies. Regression analysis is conducted primarily using ordinary least squares (OLS), pooled least squares (Pooled OLS), the generalized method of moments (GMM), and the two-step generalized method of moments (2-step GMM). Unit root testing, cointegration analysis, maximum likelihood estimation, probit regression, and hierarchical linear mixed estimation are used to a lesser extent (Baig *et al.*, 2021; Lyngstadaas, 2020; Raykov, 2017; Vuković & Jakšić, 2019; Yousaf *et al.*, 2021; Wang *et al.*, 2020).

Main results reported

The most frequent results regarding the WCM–profitability relationship identified in this literature review are reported in table 8 below. These findings relate to the indicators most commonly used in WCM–profitability analyses (ROA, ROE, Tobin's Q, CCC, and CR). A negative and significant relationship between the variables stands out as the most frequent finding; examples include the results reported by Ahmad *et al.* (2022), Dalci *et al.* (2019), Dave *et al.* (2019), Demiraj *et al.* (2022), Kusuma and Bachtiar (2018), Linh and Mohanlingam (2018), Reyad *et al.* (2022),

Soda *et al.* (2022), and Yilmaz and Acar (2022). These findings contrast with studies suggesting a positive and statistically significant association (Ahmeti *et al.*, 2022; Ajike *et al.*, 2022; Ceylan, 2021; Wassie, 2021), as well as research reporting both positive and negative directions but without statistical significance (Ayoush *et al.*, 2021; Daryanto *et al.*, 2018; Rey-Ares *et al.*, 2021). Some studies also analyze and support the existence of a concave, quadratic, or inverted U-shaped relationship between WCM and corporate profitability (Akbar *et al.*, 2021; Anton & Afloarei Nucu, 2021; Boţoc & Anton, 2017; Korent & Orsag, 2018; Phuong & Hung, 2020; Simon *et al.*, 2017).

Table 8. Main results on WCM–profitability relationship

Reported relationship	Results	% of total
Negative and significant	45	51%
Negative and non-significant	6	7%
Positive and significant	20	22%
Positive and non-significant	11	12%
Concave, quadratic, or inverted U-shaped	7	8%
Total	**89**	**100%**

Note: Some articles report more than one result because they simultaneously employ multiple variables models or analysis techniques.

Source: authors.

Discussion

Interest in the WCM–profitability relationship as a research topic appears to have increased in recent years, particularly in emerging countries (Boţoc & Anton, 2017; Braimah *et al.*, 2021), where firms often experience significant financial constraints due to underdeveloped financial markets and limited access to external financing (Wang *et al.*, 2020). These conditions encourage the use of WCM as an efficient source of internally generated funds (Boţoc & Anton, 2017) for short-term operations and for financing investment projects that enhance firm value (Akbar *et al.*, 2021). Moreover, the effect of WCM on profitability during economic downturns has been of particular interest (Ahmad *et al.*, 2022; Demiraj *et al.*, 2022; Nobanee, 2018; Raykov, 2017), given that firms commonly experience liquidity shortages during such periods.

The journals with the highest number of publications on this topic are primarily associated with the business, management, accounting, economics, finance, and mathematics fields, followed to a lesser extent by journals in the social sciences and humanities. The countries with the most publications are Canada, Switzerland, and the United Kingdom, largely because several of the most

productive journals—along with Ukrainian, South Korean, and American journals—are based in these countries.

Regards the proxies used in the WCM–profitability literature, the preference for ROA as a dependent variable stands out, as it is generally considered a comprehensive indicator of profitability (Anton *et al.*, 2021) and reflects a firm's effectiveness in using its total assets to generate net profits (Mazreku *et al.*, 2020). However, some authors consider ROE a more appropriate profitability proxy because it measures how much profit a firm generates from shareholders' invested funds (Hung & Dinh, 2022). Market value proxies are also prominent, particularly Tobin's Q, which has gained relevance in the WCM literature (Simon *et al.*, 2018). Earnings per share is another widely used market-value proxy for assessing firm profitability (Obeidat *et al.*, 2021; Ramlan *et al.*, 2019).

In relation to the independent variables, CCC is the most frequently used WCM proxy due to its ability to evaluate a firm's efficiency in managing working capital (Dave *et al.*, 2019; Linh & Mohanlingam, 2018). The CCC and its components—DSO, DINV, and DAP—help determine the level of working capital firms need to prevent operational disruptions (Ceylan, 2021), recognizing that production, distribution, and collection are not instantaneous processes and involve time lags (Enqvist *et al.*, 2014). Researchers include control variables in their models to reduce bias in estimating the relationship between working capital investment and firm performance (Mardones, 2021). Size is the most relevant control variable, as it allows researchers to characterize firms according to their scale and determine whether size relates to performance. Some authors argue that firm size offers advantages such as reducing operational costs or increasing funding capacity by lowering resources tied up in current assets (Simon *et al.*, 2018). The estimation of each proxy depends on data availability, which can lead researchers to use multiple proxies for the same variable—often contrasting them to confirm or reject the hypotheses concerning their relationships.

The analysis techniques used in these studies reflect the characteristics of panel or longitudinal data, enabling multivariate model estimation. The predominance of fixed-effects models aligns with influential prior research (Deloof, 2003; García-Teruel & Martínez-Solano, 2007). The results presented generally suggest that an aggressive and efficient WCM policy contributes to superior business performance (Dalci *et al.*, 2019). These findings are consistent with earlier studies (Eljelly, 2004; Raheman & Nasr, 2007; Shin & Soenen, 1998; Wang, 2002). However, this position does not hold across all studies, as several report a positive and significant relationship, supporting the idea that conservative policies can also enhance business performance (Ahmeti *et al.*, 2022; Ajike *et al.*, 2022; Otekunrin *et al.*, 2021; Respati *et al.*, 2022). These findings align with earlier research identifying a positive relationship between the variables (Gill *et al.*, 2010). Furthermore, this review identifies studies reporting both positive and negative relationships within the same document (Baig *et al.*, 2021; Gorondutse *et al.*, 2017; Shakatreh, 2021), often due to the simultaneous application of different models and analytical techniques.

Additionally, some researchers find that working capital investments positively influence profitability only up to a certain point (Anton & Afloarei Nucu, 2021; Hung & Dinh, 2022), supporting previous studies that identify concave, quadratic, or U-shaped relationships between WCM and profitability (Aktas *et al.*, 2015; Baños-Caballero *et al.*, 2014; Ben-Nasr, 2016).

Conclusions

WCM requires managers to ensure the liquidity necessary for day-to-day operations, making it a key determinant of profitability maximization and a driver of firm competitiveness. This study set out to conduct an accurate literature analysis of recent scholarly work by reviewing empirical evidence on the WCM–profitability relationship.

The search was conducted in the Scopus and WoS databases, as both are recognized high-quality publication platforms and important sources for financial research. A Boolean search strategy was used to identify open-access articles published in English—the language with the highest publication volume—during the 2017–2022 period, a timespan not previously explored in earlier literature reviews. After eliminating duplicate documents across the two databases and excluding studies outside the scope or focused on financial companies whose activities differ from WCM practices in other sectors, 81 documents were selected. These studies were analyzed to determine publication frequency by year, the countries of origin of journals and data samples, the variables used as dependent, independent, and control proxies, the analytical techniques employed, and the findings reported.

This literature review identifies an upward trend in publications during most of the analysis period, with the exception of the decline from 2021 to 2022. The reviewed studies predominantly examine Asian, European, and American companies, and the journals with the highest number of publications are based in Canada, South Korea, Switzerland, Ukraine, the United Kingdom, and the United States. Return on Assets and the Cash Conversion Cycle emerge as the most frequently used proxies for dependent and independent variables, respectively, while firm size is the most common control variable. Panel data analysis—particularly fixed-effects models—stands out as the preferred analytical technique, and a negative and significant relationship between WCM and profitability is the most frequently reported finding. This review contributes by compiling and analyzing the current state of research on the WCM–profitability relationship worldwide, offering insights that may guide future empirical work.

Limitations and future research

As with other research, this literature review has certain limitations. Because the eligibility criteria relied on a precise Boolean search, restricted timespan, language, and document type, the

results are limited to what the selected databases returned under these conditions, meaning that other valuable studies may fall outside the scope of this analysis. Another limitation is that only two databases were consulted; future studies may incorporate additional databases, which could further enrich the literature on this topic. Moreover, the WCM–profitability relationship remains underexplored in some countries and industries. In this regard, the growing interest of emerging economies in this research area could be supported through empirical evidence that applies the proxies and analytical techniques identified in this literature review, thereby enabling more comparable results across contexts.

References

Abuhommous, A. (2017). *The impact of offering trade credit on firms' profitability. Corporate Accounting & Finance*, *28*(6), 29-40. https://doi.org/10.1002/jcaf.22298

Afrifa, G., & Tingbani, I. (2018). Working capital management, cash flow and smes' performance. *International Journal of Banking, Accounting and Finance, 9*(1), 19-43. https://doi.org/10.1504/IJBAAF.2018.10010466

Ahangar, N. (2020). Working capital efficiency and firm profitability: Narrative literature review. *Library Philosophy and Practice (e-journal)*, 3811. https://digitalcommons.unl.edu/libphilprac/3811/

Ahmad, M., Bashir, R., & Waqas, H. (2022). Working capital management and firm performance: Are their effects same in covid 19 compared to financial crisis 2008? *Cogent Economics & Finance, 10*(1), 2101224. https://doi.org/10.1080/23322039.2022.2101224

Ahmeti, A., Ahmeti, Y., & Ahmeti, S. (2022). The impact of working capital management on sme profitability: Evidence from Kosovo. *Zbornik radova Ekonomskog fakulteta u Rijeci, 40*(2), 459-478. https://doi.org/10.18045/zbefri.2022.2.459

Ajike, A., Ibrahim, U., & Adewale, M. (2022). An empirical analysis of nexus between working capital management, policy and the corporate profitability of listed non-financial firms in Nigeria. *wseas Transactions on Business and Economics, 19*, 1255-1264. https://doi.org/10.37394/23207.2022.19.111

Akbar, M., Akbar, A., & Draz, M. (2021). Global financial crisis, working capital management, and firm performance: Evidence from an Islamic market index. *sage Open, 11*(2). https://doi.org/10.1177/21582440211015705

Aktas, N., Croci, E., & Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance, 30*, 98-113. https://doi.org/10.1016/j.jcorpfin.2014.12.008

Ali, A. (2021a). Liquidity variations and variability cohesiveness with revenue and profitability: A case of Saudi energy sector companies. *Accounting, 7*(4), 763-770. https://doi.org/10.5267/j.ac.2021.2.008

Ali, A. (2021b). Supply chain performance, profitability and liquidity: An analytical study of Indian pharmaceutical sector. *Accounting, 7*(6), 1479-1490. https://doi.org/10.5267/j.ac.2021.3.016

Ali, M., Hussin, N., & Ghani, E. (2019). Liquidity, growth and profitability of non-financial public listed Malaysia: A Malaysian evidence. *International Journal of Financial Research, 10*(3), 194-202. https://doi.org/10.5430/ijfr.v10n3p194

Anton, S. G., & Afloarei Nucu, A. E. (2021). The impact of working capital management on firm profitability: Empirical evidence from the Polish listed firms. *Journal of Risk Financial Management, 14*(1), 9.

https://doi.org/10.3390/jrfm14010009

Ayoush, M., Toumeh, A., & Shabaneh, K. (2021). Liquidity, leverage, and solvency: What affects profitability of industrial enterprises the most? *Investment Management and Financial Innovations, 18*(3), 249-259. https://doi.org/10.21511/imfi.18(3).2021.22

Baig, U., Sarwat, S., & Godil, D. (2021). Relationship of working capital management and profitability of the firms: An application of unit root and co-integration test on the various corporate sectors of Pakistan stock exchange. *Independent Journal of Management & Production, 12*(1), 377-394. https://doi.org/10.14807/ijmp.v12i1.1305

Baños-Caballero, S., García-Teruel, P., & Martínez-Solano, P. (2012). How does working capital management affect the profitability of Spanish smes? *Small Business Economics, 39*, 517-529. https://doi.org/10.1007/s11187-011-9317-8

Baños-Caballero, S., García-Teruel, P., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, *67*(3), 332-338. https://doi.org/10.1016/j.jbusres.2013.01.016

Basyith, A., Djazuli, A., & Fauzi, F. (2021). Does working capital management affect profitability? Empirical evidence from Indonesia listed firms. *Asian Economic and Financial Review*, *11*(3), 236-251. https://doi.org/10.18488/journal.aefr.2021.113.236.251

Batrancea, L. (2021). The influence of liquidity and solvency on performance within the healthcare industry: Evidence from publicly listed companies. *Mathematics*, *9*(18). https://doi.org/10.3390/math9182231

Ben-Nasr, H. (2016). State and foreign ownership and the value of working capital management. *Journal of Corporate Finance*, *41*, 217-240. https://doi.org/10.1016/j.jcorpfin.2016.09.002

Boţoc, C., & Anton, S. (2017). Is profitability driven by working capital management? Evidence for high-growth firms from emerging Europe. *Journal of Business Economics and Management*, *18*(6), 1135-1155. https://doi.org/10.3846/16111699.2017.1402362

Braimah, A., Mu, Y., Quaye, I., & Ibrahim, A. (2021). Working capital management and smes profitability in emerging economies: The Ghanaian case. *sage Open, 11*(1). https://doi.org/10.1177/2158244021989317

Čavlin, M., Tankosić, J., Miletić, V., & Ivaniš, M. (2021). Analysis of the impact of liquidity on the profitability in the medium and large meat processing enterprises in the Republic of Serbia. *Economics of Agriculture*, *68*(3), 789-803. https://doi.org/10.5937/ekoPolj2103789C

Ceylan, I. (2021). Does cash conversion cycle affect firm profitability? Evidence from the listed small and medium-sized enterprises. *Eskişehir Osmangazi Üniversitesi İİBF Dergisi: Journal of Economics and Administrative Sciences*, *16*(1), 110-123. https://doi.org/10.17153/oguiibf.853862

Dalci, I., Tanova, C., Ozyapici, H., & Bein, M. (2019). The moderating impact of firm size on the relationship between working capital management and profitability. *Prague Economic Papers*, *28*(3), 296-312. https://doi.org/10.18267/j.pep.681

Daryanto, W., Samidi, S., & Siregar, D. (2018). The impact of financial liquidity and leverage on financial performance: Evidence from property and real estate enterprises in Indonesia. *Management Science Letters*, *8*(12), 1345-1352. https://doi.org/10.5267/j.msl.2018.9.005

Dave, A., Parwani, A., Dave, T., & Joshi, A. (2019). Cash conversion cycle and profitability of textile companies: Evidences from India. *International Journal of Engineering and Advanced Technology*, *8*(6S2), 1098-1102. https://doi.org/10.35940/ijeat.F1325.0886S219

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance & Accounting*, *30*(3-4), 573-588. https://doi.org/10.1111/1468-5957.00008

Demiraj, R., Dsouza, S., & Abiad, M. (2022). Working capital management impact on profitability: Pre-pandemic and pandemic evidence from the European automotive industry. *Risks, 10*(12), 236. https://doi.org/10.3390/risks10120236

Eljelly, A. (2004). Liquidity–profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, *14*(2), 48-61. https://doi.org/10.1108/10569210480000179

Enqvist, J., Graham, M., & Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. *Research in International Business and Finance, 32*, 36-49. https://doi.org/10.1016/j.ribaf.2014.03.005

García-Teruel, P., & Martínez-Solano, P. (2007). Effects of working capital management on sme profitability. *International Journal of Managerial Finance Accounting*, *3*(2), 164-177. https://doi.org/10.1108/17439130710738718

Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business Economics Journal*, *10*(1), 1-9.

Gołaś, Z. (2020). Impact of working capital management on business profitability: Evidence from the Polish dairy industry. *Agricultural Economics (Czech Republic)*, *66*(6), 278-285. https://doi.org/10.17221/335/2019-AGRICECON

Gonçalves, T., Gaio, C., & Robles, F. (2018). The impact of working capital management on firm profitability in different economic cycles: Evidence from the United Kingdom. *Economics and Business Letters*, *7*(2), 70-75. https://doi.org/10.17811/ebl.7.2.2018.70-75

Gorondutse, A., Ali, R., Abubakar, A., & Naalah, M. (2017). The effect of working capital management on smes profitability in Malaysia. *Polish Journal of Management Studies*, *16*(2), 99-109. https://doi.org/10.17512/pjms.2017.16.2.09

Hameer, N., Ramakrishnan, S., & Gillani, S. (2021). The impact of working capital management on firm performance across Bumiputera and non-Bumiputera manufacturing firms in Malaysia. *Estudios de Economía Aplicada, 39*(4). https://doi.org/10.25115/eea.v39i4.4585

Hausman, J. (1978). Specification tests in econometrics. *Econometrica, 46*, 1251-1271. https://doi.org/10.2307/1913827

Högerle, B., Charifzadeh, M., Ferencz, M., & Kostin, K. (2020). The development of working capital management and its impact on profitability and shareholder value: Evidence from Germany. *Strategic Management*, *25*(2), 27-39. https://doi.org/10.5937/StraMan2002027H

Hung, N., & Su Dinh, T. (2022). Threshold effect of working capital management on firm profitability: Evidence from Vietnam. *Cogent Business & Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2141090

Hussain, S., Hassan, A., Quddus, A, & Rafiq, M. (2021a). Cash conversion cycle sensitivity by moderating role of exchange rates volatility on firm's financial performance. *Business: Theory and Practice, 22*(2), 277-289. https://doi.org/10.3846/btp.2021.13147

Hussain, S., Nguyen, V., Nguyen, Q., Nguyen, H., & Nguyen, T. (2021b). Macroeconomic factors, working capital management, and firm performance: A static and dynamic panel analysis. *Humanities and Social Sciences Communications, 8*(1), 123. https://doi.org/10.1057/s41599-021-00778-x

Ismail, N., Mohamad, N., & Ramli, A. (2019). Liquidity and profitability of oil and gas industry in Malaysia. *International Journal of Engineering and Advanced Technology*, *9*(1), 3603-3606.

https://doi.org/10.35940/ijeat.A2696.109119

Jaworski, J., & Czerwonka, L. (2021). Meta-study on the relationship between profitability and liquidity of enterprises in macroeconomic and institutional environment. *Decision*, *48*(2), 233-246. https://doi.org/10.1007/s40622-021-00280-y

Jaworski, J., & Czerwonka, L. (2022). Profitability and working capital management: Evidence from the Warsaw Stock Exchange. *Journal of Business Economics and Management*, *23*(1), 180-198. https://doi.org/10.3846/jbem.2022.15087

Johnson, R. W., & Melicher, R. W. (2003). *Administración financiera*. cecsa.

Kabuye, F., Kato, J., Akugizibwe, I., & Bugambiro, N. (2019). Internal control systems, working capital management and financial performance of supermarkets. *Cogent Business & Management*, *6*(1), 1-18. https://doi.org/10.1080/23311975.2019.1573524

Kartikasary, M., Marsintauli, F., Sitinjak, M., Laurens, S., Novianti, E., & Situmorang, R. (2021). The effect of working capital management, fixed financial asset ratio, financial debt ratio on profitability in Indonesian consumer goods sector. *Accounting*, *7*(3), 661-666. https://doi.org/10.5267/j.ac.2020.12.011

Kasozi, J. (2017). The effect of working capital management on profitability: A case of listed manufacturing firms in South Africa. *Investment Management and Financial Innovations*, *14*(2), 336-346. https://doi.org/10.21511/imfi.14(2-2).2017.05

Kayani, U., De Silva, T., & Gan, C. (2019). A systematic literature review on working capital management: An identification of new avenues. *Qualitative Research in Financial Markets*, *11*(3), 352-366. https://doi.org/10.1108/QRFM-05-2018-0062

Korent, D., & Orsag, S. (2018). The impact of working capital management on profitability of Croatian software companies. *Zagreb International Review of Economics & Business*, *21*(1), 47-65. https://doi.org/10.2478/zireb-2018-0007

Kowsari, A., & Shorvarzi, M. (2017). The relationship between working capital management, financial constraints and performance of listed companies in Tehran stock exchange. *Journal of Politics and Law*, *10*(2), 248-258. https://doi.org/10.5539/jpl.v10n2p248

Kusuma, H., & Bachtiar, A. (2018). Working capital management and corporate performance: Evidence from Indonesia. *Journal of Management and Business Administration: Central Europe*, *26*(2), 76-88. https://doi.org/10.7206/jmba.ce.2450-7814.229

Lefebvre, V. (2020). Performance, working capital management, and the liability of smallness: A question of opportunity costs? *Journal of Small Business Management, 60*(3), 704-733. https://doi.org/10.1080/00472778.2020.1735252

Li, K., Musah, M., Kong, Y., Adjei Mensah, I., Antwi, S., Bawuah, J., & Andrew Osei, A. (2020). Liquidity and firms' financial performance nexus: Panel evidence from non-financial firms listed on the Ghana Stock Exchange. *sage Open, 10*(3). https://doi.org/10.1177/2158244020950363

Linh, N., & Mohanlingam, S. (2018). The effects of cash conversion cycle on profitability: An insight into the agriculture and food industries in Thailand. *Asian Journal of Business Accounting, 11*(1), 97-119. https://doi.org/10.22452/ajba.vol11no1.4

Loo, P. Y., & Lau, W. T. (2019). Key components of working capital management: Investment performance in Malaysia. *Management Science Letters, 9*(12), 1955-1964. https://doi.org/10.5267/j.msl.2019.7.010

Lyngstadaas, H. (2020). Packages or systems? Working capital management and financial performance among listed u.s.

manufacturing firms. *Journal of Management Control*, *31*(4), 403-450. https://doi.org/10.1007/s00187-020-00306-z

Mandipa, G., & Sibindi, A. (2022). Financial performance and working capital management practices in the retail sector: Empirical evidence from South Africa. *Risks*, *10*(3), 63. https://doi.org/10.3390/risks10030063

Mardones, J. (2021). Working capital management and business performance: Evidence from Latin American companies. *Economic Research–Ekonomska Istraživanja*, *35*(1), 3189-3205. https://doi.org/10.1080/1331677X.2021.1986675

Mazanec, J. (2022). The impact of working capital management on corporate performance in small–medium enterprises in the Visegrad Group. *Mathematics*, *10*(6), 951. https://doi.org/10.3390/math10060951

Mazanec, J. (2022a). Working capital management as crucial tool for corporate performance in the transport sector: A case study of Slovakia and the Czech Republic. *Mathematics*, *10*(15), 2584. https://doi.org/10.3390/math10152584

Mazreku, I., Morina, F., & Zeqaj, F. (2020). Does working capital management affect the profitability of commercial banks: The case of Kosovo. *European Journal of Sustainable Development*, *9*(1), 126-140. https://doi.org/10.14207/ejsd.2020.v9n1p126

Morshed, A. (2020). Role of working capital management in profitability considering the connection between accounting and finance. *Asian Journal of Accounting Research, 5*(2), 257-267. https://doi.org/10.1108/AJAR-04-2020-0023

Muhmad, S., & Muhamad, R. (2021). Sustainable business practices and financial performance during pre- and post-sdg adoption periods: A systematic review. *Journal of Sustainable Finance & Investment*, *11*(4), 291-309. https://doi.org/10.1080/20430795.2020.1727724

Nastiti, P., Atahau, A., & Supramono, S. (2019). Working capital management and its influence on profitability and sustainable growth. *Business: Theory and Practice, 20*, 61-68. https://doi.org/10.3846/BTP.2019.06

Nguyen, A., & Nguyen, T. (2018). Working capital management and corporate profitability: Empirical evidence from Vietnam. *Foundations of Management*, *10*(1), 195-206. https://doi.org/10.2478/fman-2018-0015

Nguyen, A., Pham, H., & Nguyen, H. (2020). Impact of working capital management on firm's profitability: Empirical evidence from Vietnam. *Journal of Asian Finance, Economics and Business, 7*(3), 115-125. https://doi.org/10.13106/jafeb.2020.vol7.no3.115

Nguyen, C. (2020). Impact of working capital management on firm performance in different business cycles: Evidence from Vietnam. *Journal of Asian Finance, Economics and Business*, *7*(12), 863-867. https://doi.org/10.13106/JAFEB.2020.VOL7.NO12.863

Nobanee, H. (2018). Efficiency of working capital management and profitability of uae construction companies: Size and crisis effects. *Polish Journal of Management Studies*, *18*(2), 209-215. https://doi.org/10.17512/pjms.2018.18.2.17

Obeidat, M., Almomani, T., & Almomani, M. (2021). Analyzing the cash conversion cycle relationship with the financial performance of chemical firms: Evidence from Amman Stock Exchange. *Accounting, 7*(6), 1339-1346. https://doi.org/10.5267/j.ac.2021.4.004

Osho, O., Omankhanlen, A., Fasanmi, M., & Akinjare, V. (2021). Liquidity and the performance of the Nigerian manufacturing firms: An economic value-added approach. *wseas Transactions on Environment and Development*, *17*, 47-55. https://doi.org/10.37394/232015.2021.17.5

Otekunrin, A., Nwanji, T., Fagboro, D., Olowookere, J., & Adenike, O. (2021). Does working capital management impact

an enterprise's profitability? Evidence from selected Nigerian firms. *Problems and Perspectives in Management*, *19*(1), 477-486. https://doi.org/10.21511/ppm.19(1).2021.40

Othuon, D., Gatimbu, K., Musafiri, C., & Ngetich, F. (2021). Working capital management impacts on small-scale coffee wet mills' financial performance in eastern Kenya. *Heliyon*, *7*(9). https://doi.org/10.1016/j.heliyon.2021.e07887

Page, M., McKenzie, J., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., ... & Moher, D. (2021). The prisma 2020 statement: An updated guideline for reporting systematic reviews. *bmj, 372*, n71. https://doi.org/10.1136/bmj.n71

Perera, W., & Priyashantha, P. (2018). The impact of working capital management on shareholders' wealth and profitability: Evidence from Colombo stock exchange. *Investment Management and Financial Innovations*, *15*(2), 104-115. https://doi.org/10.21511/imfi.15(2).2018.10

Pham, K., Nguyen, Q., & Nguyen, C. (2020). Effect of working capital management on the profitability of steel companies on Vietnam stock exchanges. *Journal of Asian Finance, Economics and Business*, *7*(10), 741-750. https://doi.org/10.13106/JAFEB.2020.VOL7.N10.741

Phuong, N., & Hung, D. (2020). Impact of working capital management on firm profitability: Empirical study in Vietnam. *Accounting*, *6*(3), 259-266. https://doi.org/10.5267/j.ac.2020.3.001

Prasad, P., Narayanasamy, S., Paul, S., Chattopadhyay, S., & Saravanan, P. (2019). Review of literature on working capital management and future research agenda. *Journal of Economic Surveys*, *33*(3), 827-861. https://doi.org/10.1111/joes.12299

Prempeh, K., & Peprah-Amankona, G. (2020). Does working capital management affect profitability of Ghanaian manufacturing firms? *Zagreb International Review of Economics & Business*, *23*(1), 1-18. https://doi.org/10.2478/zireb-2020-0001

Raheman, A., & Nasr, M. (2007). Working capital management and profitability: Case of Pakistani firms. *International Review of Business Research Papers*, *3*(1), 279-300.

Ramlan, H., Saad, N., Mohamad, N., & Haniff, M. (2019). Liquidity and energy firms' performance in Malaysia. *Journal of Mechanics of Continua and Mathematical Sciences*, *14*(6), 938-944. https://doi.org/10.26782/jmcms.2019.12.00071

Raykov, E. (2017). The liquidity–profitability trade-off in Bulgaria in terms of the changed financial management functions during crisis. *Management (Croatia)*, *22*(1), 135-156. https://doi.org/10.30924/mjcmi/2017.22.1.135

Respati, D., Musyaffi, A., Zahra, S., & Hindaryatiningsih, N. (2022). Exploring working capital management and performance of manufacturing firms in Indonesia. *Quality – Access to Success*, *23*(188). https://doi.org/10.47750/QAS/23.188.26

Reyad, H., Zariyawati, M., Ong, T., & Muhamad, H. (2022). The impact of macroeconomic risk factors, the adoption of financial derivatives on working capital management, and firm performance. *Sustainability*, *14*(21), 14447. https://doi.org/10.3390/su142114447

Rey-Ares, L., Fernández-López, S., & Rodeiro-Pazos, D. (2021). Impact of working capital management on profitability for Spanish fish canning companies. *Marine Policy, 130*, 104583. https://doi.org/10.1016/j.marpol.2021.104583

Richards, V. D., & Laughlin, E. J. (1980). A cash conversion cycle approach to liquidity analysis. *Financial Management*, *9*(1), 32-38. https://doi.org/10.2307/3665310

Roy, S., Misra, A., Padhan, P., & Rahman, M. (2019). Interrelationship among liquidity, regulatory capital and profitability: A study on Indian banks. *Cogent Economics & Finance, 7*(1). https://doi.org/10.1080/23322039.2019.1664845

Sameni, A., & Fakour, R. (2019). The effect of working capital management on financial performance and operational cash flows of companies accepted in Tehran securities exchange. *Humanities and Social Sciences Reviews*, *7*(6), 625-632. https://doi.org/10.18510/hssr.2019.7693

Shakatreh, M. (2021). The effect of liquidity ratios management on the profitability of industrial companies listed on the Amman Stock Exchange. *Accounting, 7*(5), 1131-1138. https://doi.org/10.5267/j.ac.2021.2.026

Shin, H.-H., & Soenen, H. (1998). Efficiency of working capital and corporate profitability. *Financial Practice and Education, 8*(2), 37-45.

Simon, S., Sawandi, N., & Abdul-Hamid, M. (2017). The quadratic relationship between working capital management and firm performance: Evidence from the Nigerian economy. *Journal of Business and Retail Management Research, 12*(1), 94-108. https://doi.org/10.24052/jbrmr/v12is01/tqrbwcmafpeftne

Simon, S., Sawandi, N., & Abdul-Hamid, M. (2018). A reassessment of the relationship between working capital management and firm performance: Evidence from non-financial companies in Nigeria. *Investment Management and Financial Innovations, 15*(3), 249-266. https://doi.org/10.21511/imfi.15(3).2018.21

Singh, H., & Kumar, S. (2014). Working capital management: A literature review and research agenda. *Qualitative Research in Financial Markets, 6*(2), 173-197. https://doi.org/10.1108/QRFM-04-2013-0010

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Soda, M., Hassan Makhlouf, M., Oroud, Y., & Al Omari, R. (2022). Is firms' profitability affected by working capital management? A novel market-based evidence in Jordan. *Cogent Business & Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2049671

Soukhakian, I., & Khodakarami, M. (2019). Working capital management, firm performance and macroeconomic factors: Evidence from Iran. *Cogent Business & Management, 6*(1). https://doi.org/10.1080/23311975.2019.1684227

Stock, J., & Watson, M. (2012). *Introducción a la econometría*. Pearson Educación. (3ero edición ed.)

Tijjani, B., Ashiq, M., Siddique, N., Khan, M., & Rasul, A. (2021). A bibliometric analysis of quality research papers in Islamic finance: Evidence from Web of Science. *isra International Journal of Islamic Finance*, *13*(1), 84-101. https://doi.org/10.1108/IJIF-03-2020-0056

Tingbani, I., Tauringana, V., Damoah, I., & Sha'ven, W. (2020). Working capital management and financial performance of uk listed firms: A contingency approach. *International Journal of Banking, Accounting and Finance*, *11*(2), 173-201. https://doi.org/10.1504/IJBAAF.2020.106708

Valcanover, V. M., Sonza, I. B., & da Silva, W. V. (2020). Behavioral finance experiments: A recent systematic literature review. *sage Open, 10*(4). https://doi.org/10.1177/2158244020969672

Vaz da Fonseca, P., Decourt Savelli, A., & Nascimento Jucá, M. (2020). A systematic review of the influence of taxation on corporate capital structure. *International Journal of Economics and Business Administration, 8*(2), 155-178. https://doi.org/10.35808/ijeba/449

Vuković, B., & Jakšić, D. (2019). The effect of working capital management on profitability: Evidence from Southeast Europe. *Economics of Agriculture*, *66*(1), 159-172. https://doi.org/10.5937/ekoPolj1901159V

Wang, Y.-J. (2002). Liquidity management, operating performance, and corporate value: Evidence from Japan and

Taiwan. *Journal of Multinational Financial Management*, *12*(2), 159-169. https://doi.org/10.1016/S1042-444X(01)00047-0

Wang, Z., Akbar, M., & Akbar, A. (2020). The interplay between working capital management and a firm's financial performance across the corporate life cycle. *Sustainability*, *12*(4), 1661. https://doi.org/10.3390/su12041661

Wassie, F. (2021). Working capital management and its impact on firms' performance: An empirical analysis on Ethiopian exporters. *Journal of Risk and Financial Management*, *14*(6), 6681572. https://doi.org/10.1155/2021/6681572

Yameen, M., Farhan, N., & Tabash, M. (2019). The impact of liquidity on firms' performance: Empirical investigation from Indian pharmaceutical companies. *Academic Journal of Interdisciplinary Studies*, *8*(3), 222-232. https://doi.org/10.36941/ajis-2019-0019

Yilmaz, I., & Acar, G. (2022). Working capital management and profitability relationship: The role of macroeconomic indicators. *Finance: Theory and Practice*, *26*(3), 50-63. https://doi.org/10.26794/2587-5671-2022-26-3-50-63

Yousaf, M., & Bris, P. (2021). Effects of working capital management on firm performance: Evidence from the efqm certified firms. *Cogent Economics & Finance*, *9*(1). https://doi.org/10.1080/23322039.2021.1958504

Yousaf, M., Bris, P., & Haider, I. (2021). Working capital management and firm's profitability: Evidence from Czech certified firms from the efqm excellence model. *Cogent Economics & Finance*, *9*(1). https://doi.org/10.1080/23322039.2021.1954318