

A Bibliometric Review Of The Overlooked Connection Between Business Strategy, Product Market Competition, And Cash Conversion Cycle.

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Abstract

Most studies on working capital management, with a focus on the Cash Conversion Cycle (CCC), have centered around the relationship between the CCC and performance, neglecting the impact of business strategy and product market competition. Similarly, research on business strategy and competition has rarely addressed working capital efficiency, prioritizing agency issues, corporate governance, and firm value. Therefore, a literature review on the CCC from 1974 to 2023 was conducted based on keywords, titles, and abstracts. Analyses indicate a span of 39 years between the seminal work of Richards and Laughlin (1980) and the period of increased publications on the CCC. It also reveals that researchers' interest escalated after the 2008 financial crisis. The literature review concludes that the research field on the CCC is recent, with both business strategy and product market competition being overlooked in studies. Consequently, suggestions for future research are proposed to explore the intersection between the CCC, business strategy, and product market competition.

Keywords: *Cash Conversion Cycle, Working Capital Management, Business Strategy, Competition, Performance.*

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I. Introduction

Since the seminal works of Gitman (1974) and Richards and Laughlin (1980), which introduced the Cash Conversion Cycle (CCC) as a more effective tool for analyzing the liquidity aspect of a firm, few studies have been developed on the subject until the occurrence of the global financial crisis in 2008. Since then, research and studies on the topic have garnered the attention of researchers, especially in the post-economic crisis periods, highlighting the most recent one triggered by the COVID-19 pandemic. Despite this, little attention has been given to the effect exerted by business strategy on working capital management and how product market competition influences this relationship. The focus has been on agency issues, corporate governance, and firm value (Babar & Habib, 2020; Cao et al., 2022; Houqe et al., 2023; Wang et al., 2021). Therefore, this article aims to conduct a literature review on the Cash Conversion Cycle and explore the gap in understanding "how business strategy and product market competition influence the relationship between the CCC and firm performance.

The classical conceptual definition of the Cash Conversion Cycle (CCC) was provided by Gitman (1974) and Richards and Laughlin (1980), defining it as the time it takes for the financial resource invested in inventory to return to cash in relation to sales. This concept has been reiterated in numerous studies, including recent ones (Tiwari et al., 2023; Carnes et al., 2023; Vlismas, 2023; Houqe et al., 2023; Chen et al., 2022; Barros et al., 2022; Lin & Wang, 2021; Goodell et al., 2021; Mattö & Niskanen, 2021; Zimon & Tarighi, 2021; Kwatiah & Asiamah, 2020; Doğan & Kevser, 2020). According to Ameer and Othman (2021), Working Capital Management (WCM) is crucial for the survival of all businesses. In this context, Ebben and Johnson (2015) highlight that the CCC has been used as a performance measure and a reference for WCM, as it measures the time between cash inflows and outflows for companies. Laik and Mirchandani (2021) consider the CCC as a metric signaling optimal operational and credit performance. Conversely, Zaher and Illescas (2022) note that studies on the CCC are not consistent regarding its relationship with performance, suggesting that such

discrepancies can be explained by internal and external factors of the firm. Meanwhile, Goel and Sharma (2015) propose that the CCC is influenced by firm-specific factors such as leverage, tangibility, profitability, revenue growth, size, and age of the firm.

Several empirical studies have delved into the Cash Conversion Cycle (CCC). For instance, the work of Fejzullahu and Govori (2021) investigated the profitability and practice of working capital management, revealing that an increase in the CCC positively influences operating profit and Return on Assets (ROA). They found that a firm's competitiveness is sustained by extending the credit period granted to customers. The research by Yazdanfar and Öhman (2014) concluded that efficient CCC management allows greater control over working capital and short-term investments. Essel (2023) empirical investigation into the impact of capital structure on firm performance found a positive relationship between the CCC and firm performance. Mahmood et al. (2022) argued in their research that the firm's performance sensitivity to short-term debts changes when the CCC period fluctuates. Virolainen et al. (2015), examining working capital management models based on the Cash Conversion Cycle, highlighted that influential companies impact their payment terms and inventory sizes, thus operating with lower working capital. Their findings suggest that new business strategies can be formulated for companies operating in developing markets based on the CCC. Therefore, in the context of working capital theory, the CCC has been linked in research to constructs such as firm performance, working capital management, credit granted, and capital investments.

The recent study by Vlismas (2023) presented empirical results on the moderating effect of business strategy on the relationship between working capital management and firm performance. As far as this review has reached, this study is pioneering in addressing the effect that strategy has on this relationship, reinforcing the contribution of this article that seeks to present the state of the art in research on the Cash Conversion Cycle (CCC). This allows directing research towards the context of business strategy and product market competition.

The expected outcomes of this theoretical article aim to contribute by: 1) Expanding the research field and conceptualization of the Cash Conversion Cycle; 2) Identifying the state of the art in research on the topic, considering key methodologies, findings, and existing gaps; 3) Providing an agenda for future research and suggesting research propositions; 4) Complementing previous theoretical studies that have reviewed the literature to provide a foundation for further research.

These objectives are designed to enhance the comprehension of the Cash Conversion Cycle, provide insights into the current research landscape, guide future research directions, and complement earlier theoretical inquiries that have laid the groundwork for subsequent studies. The structure of this article is as follows: Section 2 outlines the methodology employed for the bibliometric review, Section 3 provides a descriptive analysis of research on the Cash Conversion Cycle, Section 4 presents the analysis and discussions, and Section 5 offers the conclusion.

II. Methodology

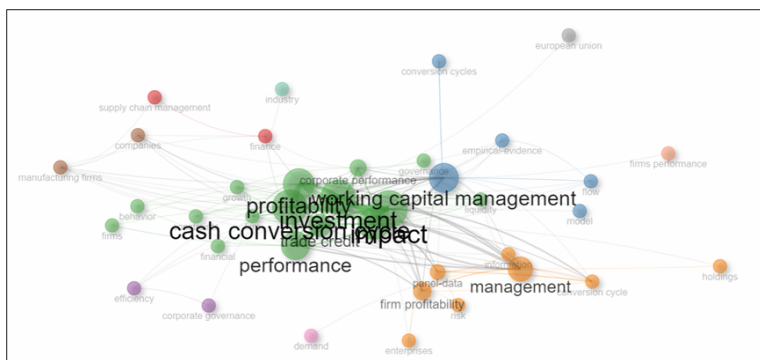
This article adheres to the methodology proposed by Tranfield et al. (2003), which involves defining search terms, selecting journals aligned with the research focus, and classifying articles based on their relevance in the scientific environment. Data were extracted from the Scopus and Web of Science databases, with the filtering of journals linked to the fields of business, administration, accounting, economics, econometrics, and finance.

A search was conducted in the Scopus and Web of Science databases using keywords in papers published from 1974 to 2023, focusing on combination groups according to the following formula: "(Cash Conversion Cycle) and (firm performance)" or "(Cash Conversion Cycle) and (return on assets)" or "(Cash Conversion Cycle) and (working capital management)" or "(Cash Conversion Cycle) and (business strategy)". The selected constructs were searched in the titles, keywords, and specifically in the abstracts of the articles, as they provide a more relevant context for the researched articles and align with the central theme of interest in this theoretical article.

For data processing, the R software with the bibliometrix package was utilized to merge the databases, resulting in the selection of 371 articles. After a thorough review of titles, keywords, and abstracts, 78 articles were excluded from the dataset as they did not align with the specified business area in the methodological proposal or lacked relevance to the proposed research context, which focuses on the Cash Conversion Cycle (CCC), business strategies, and product market competition. This led to a final sample of 293 articles.

The main constructs identified in the selected articles are: profitability, performance, working capital management, investments, management, trade credit, and corporate performance, as illustrated in Figure 1.

Figure 1
Co-occurrence Network



As seen in Figure 1, the presence of the business strategy construct (BS) is not evident, despite being a construct of significant importance in research investigating working capital management. Therefore, a potential gap may exist, namely, the influence of business strategy on the relationship between the Cash Conversion Cycle and firm performance, warranting further investigation and empirical research.

Figure 2
Word Cloud



Figure 2 demonstrates the frequency of keywords across the 293 articles. It is observed that profitability is predominant in research related to the Cash Conversion Cycle, with other noteworthy keywords being impact, management, determinants, trade credit, firm profitability, investment, and performance. Similar to the structure of Figure 1, the keywords "business strategy" and "product market competition" are not prominently visible. Given the significance of these constructs, this reinforces the existence of gaps and the need for further empirical investigations.

III. Descriptive Analysis Of Research On The Cash Conversion Cycle (CCC)

With the selected articles based on the methodological scope, a descriptive analysis was conducted, covering conceptual definitions, journals, authors, publication intervals, methodologies, and models used, as well as the sectors in which the studies were applied. The aim of this analysis was to establish new research directions.

Cycle of Cash Conversion (CCC) definition.

According to Gitman (1974), the Cash Conversion Cycle (CCC) can be defined as the period between the cash outlay for the purchase of raw materials or goods and the receipt of cash from the sale of goods and products. This concept has been replicated in various studies, some expanding its scope and others synthesizing it, but without deviating from its initial essence. Therefore, the theory conceptualizes the CCC as the time between the cash outlay for the acquisition of raw materials or goods and their respective receipt from the sale of these goods or products (Chang, 2018; Goodell et al., 2021; Jose et al., 1996; Lin & Lin, 2021; Mun E Jang, 2015; Rey-Ares et al., 2021; Richardson, 1972; Subhi, 2018; Tsai, 2008). In other words, it is essentially the time needed for a unit of currency invested in inventory to convert back into a unit of currency received from the customer through the sale of that inventory (Stewart, 1995).

According to Oseifuah and Gyekye (2016), the theory of Cash Conversion Cycle (CCC) presents four basic premises: 1) there is a negative relationship between working capital management and profitability; 2) there is a negative relationship between the inventory conversion period and profitability; 3) there is a negative relationship between the accounts receivable conversion period and profitability; and, finally, 4) there is a

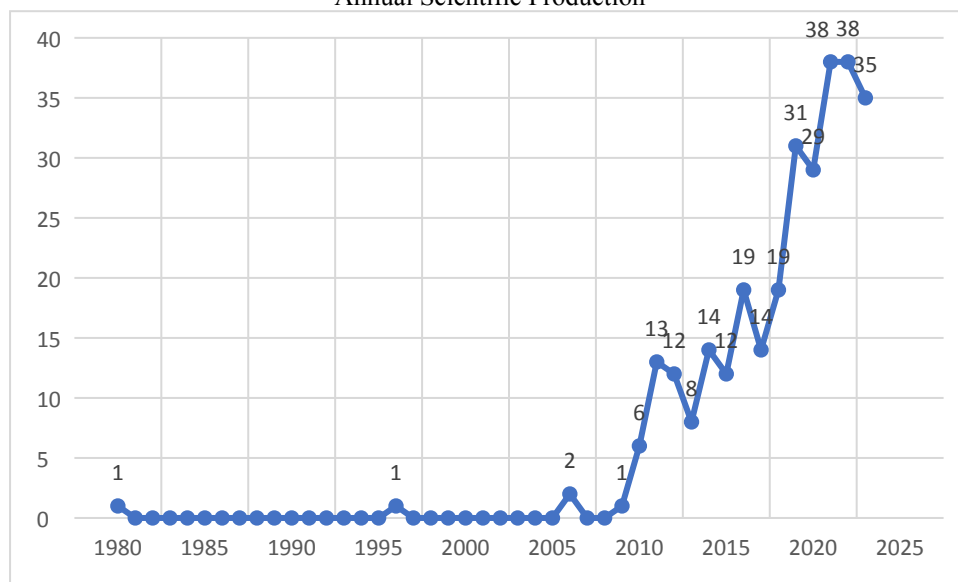
positive relationship between the accounts payable period and profitability. According to Pei et al. (2022), the CCC is a widely used temporal perspective proxy to measure working capital management efficiency, as it connects the operational and commercial activities of suppliers and customers.

The cash conversion cycle has drawn the attention of researchers and business managers in recent years, especially since 2010, a period following severe global economic crises. This may be a possible cause for the growing number of empirical studies that use this construct as a central theme or as a control variable in models used to measure working capital and working capital management.

The time interval between publications and the growth of research on the Cash Conversion Cycle (CCC).

Since Gitman's seminal work in 1974 on the Cash Conversion Cycle (CCC) and the theorization presented by Richards and Laughlin (1980), there has been a significant increase in the number of studies dedicated to investigating the behavior of the cash conversion cycle in the context of working capital and its management. This increase, more specifically, became evident from the year 2010, as illustrated in Figure 3, which demonstrates the annual evolution of scientific production.

Figure 3
Annual Scientific Production



As observed in Figure 3, there were periods of considerable spacing between publications on the Cash Conversion Cycle (CCC), with a significant shift from 2010 characterized by shorter intervals and an increase in the number of publications. This demonstrates the importance and interest of researchers in investigating the cash conversion cycle as a proxy for measuring the efficiency of working capital management and its impact on firm performance.

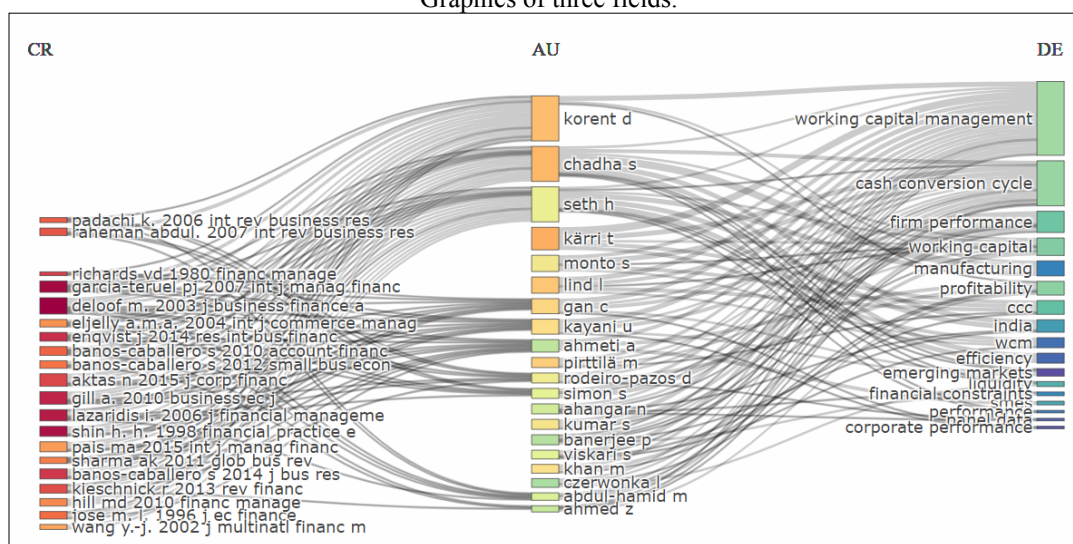
One can deduce that the literature on the Cash Conversion Cycle (CCC), particularly in terms of empirical studies, is relatively recent, reinforcing the existence of unexplored gaps such as the effect of business strategy and market competition. Additionally, it is noteworthy that external events to organizations, such as global economic crises, have influenced the increased research in this area.

The events that occurred at the turn of the 1980s to the 1990s, up to the year 2000, including the emerging markets crisis in 1994 and the subsequent Asian market crisis in 1997 marked by increasing country indebtedness due to a credit bubble, can be considered exogenous factors that motivated the interest and growth of research on the Cash Conversion Cycle (CCC). During this period, economies such as Mexico, Thailand, South Korea, and Malaysia were heavily affected, and the crisis also impacted Japan's economy, leading to the devaluation of its currency. Between 2007 and 2008, the major subprime financial crisis occurred, considered by many economists as the worst financial crisis since the New York Stock Exchange crash. This crisis resulted in the bankruptcies of major banks such as Lehman Brothers, Bear Stearns, and Merrill Lynch, as well as forcing governments to intervene in the financial market to control the crisis (Garcia & Gomes, 2017).

Loo and Lau's (2019) research examined the components of working capital encompassing the post-Asian crisis and pre-subprime crisis period, spanning from 2000 to 2017. They used four performance indicators: ROI, ROA, Q-Tobin, and stock performance. The results indicate significant relationships between the Cash Conversion Cycle (CCC) and investment performance both before and after the subprime crisis, highlighting the robust negative effect of the CCC.

The recent health and economic crisis caused by the COVID-19 pandemic has resulted in numerous studies seeking to examine its effect on the Cash Conversion Cycle (CCC). For example, the study by Rey-Ares et al. (2021) investigated credit constraints in the face of the COVID-19 pandemic crisis, drawing an analogy with the subprime crisis that occurred in 2007-2008. The authors concluded that the economic profitability of companies is related to the Cash Conversion Cycle (CCC). Tarkom (2022) examined the impact of the COVID-19 pandemic on working capital management from 2019 to 2021. Empirical results suggest that companies exposed to COVID-19 operated with higher CCC levels, while companies benefiting from government incentives and more investment opportunities operated with lower CCC levels. The work of Zimon and Tarighi (2021) investigated the effects of the COVID-19 pandemic on working capital and management policies among small and medium-sized enterprises. The results showed that companies adopted a moderate-conservative model as a working capital management strategy.

Figure 4
Graphics of three fields.

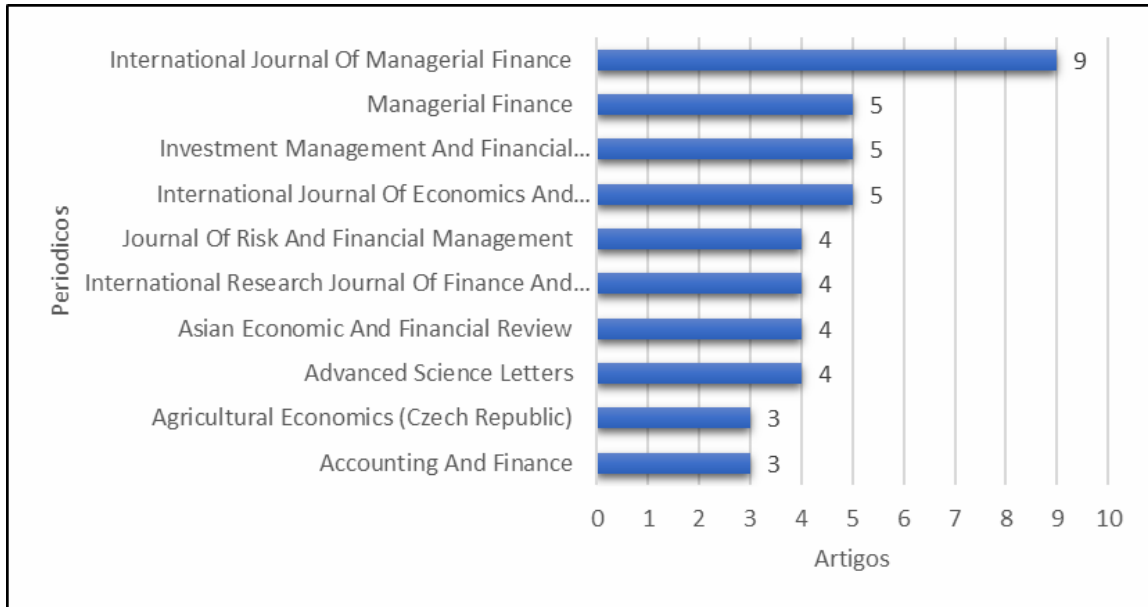


Therefore, researchers have begun to closely examine the relationship of the cash conversion cycle in the post-crisis period as a way to try to mitigate negative impacts and anticipate such events, creating business strategies. The three-field chart in Figure 4 demonstrates the relationship of the most cited studies (CR), highlighting the work of Richards and Laughlin (1980), the main authors (AU), and the keywords (DE). This supports the perception that severe economic crises have motivated increased attention to the cash conversion cycle.

Journals with the highest number of publications and locally most cited.

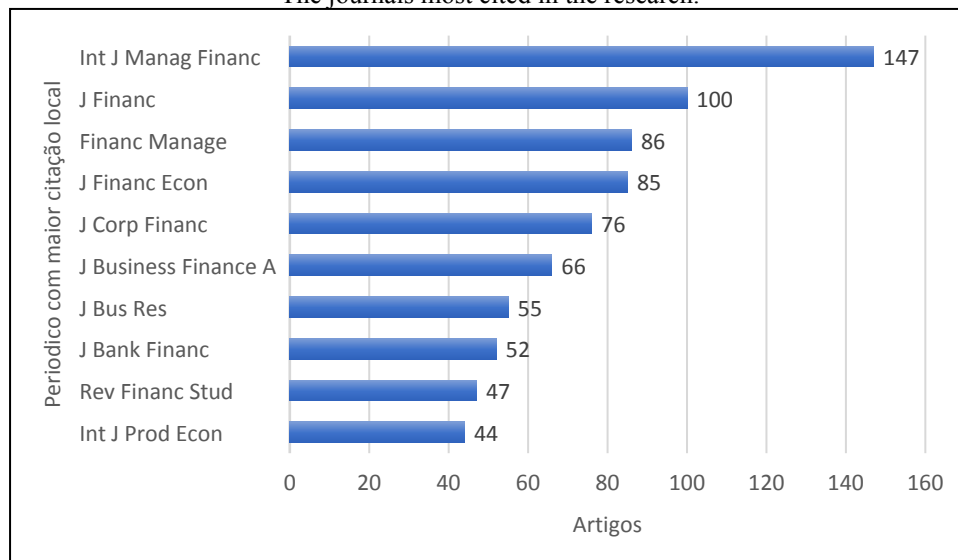
As presented in the previous section, there has been a significant growth in research addressing the CCC as a proxy for measuring working capital management efficiency. Therefore, this section aims to highlight the main authors over the last 15 years who have been the most significant in terms of publications and present the results and methodologies used.

Figure 5
Journals with the highest number of publications.



The three journals with the highest number of publications in the local context are, respectively: International Journal of Managerial Finance, Managerial Finance, and International Management and Financial Innovations, as demonstrated in Figure 5. The three most cited journals in local studies are presented in Figure 6.

Figure 6
The journals most cited in the research.



Autores com maior publicação, maior citação local e global

This section features the top 10 authors with the greatest impact in each analysis, offering valuable insights for researchers interested in the topic, directing them to the most influential works. In Figure 7, the top 10 authors with the highest number of publications in the period are presented, highlighting the work of Kärri et al. (2012) with the title: 'Working Capital Management in the Automotive Industry: Analysis of the Financial Value Chain,' which received 64 citations in other studies investigating the relationship between the cash conversion cycle and firm performance.

Figure 7
Authors with the highest publication count.

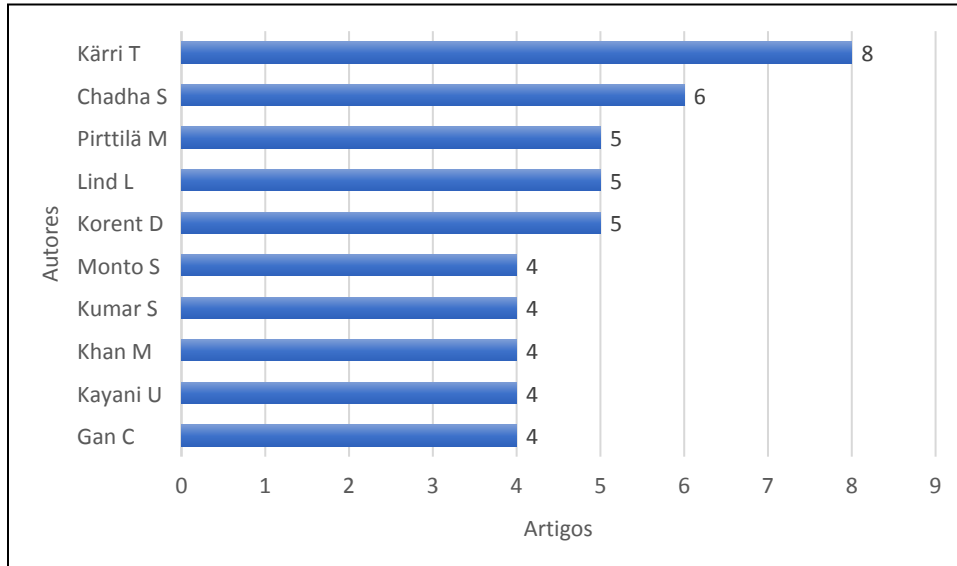
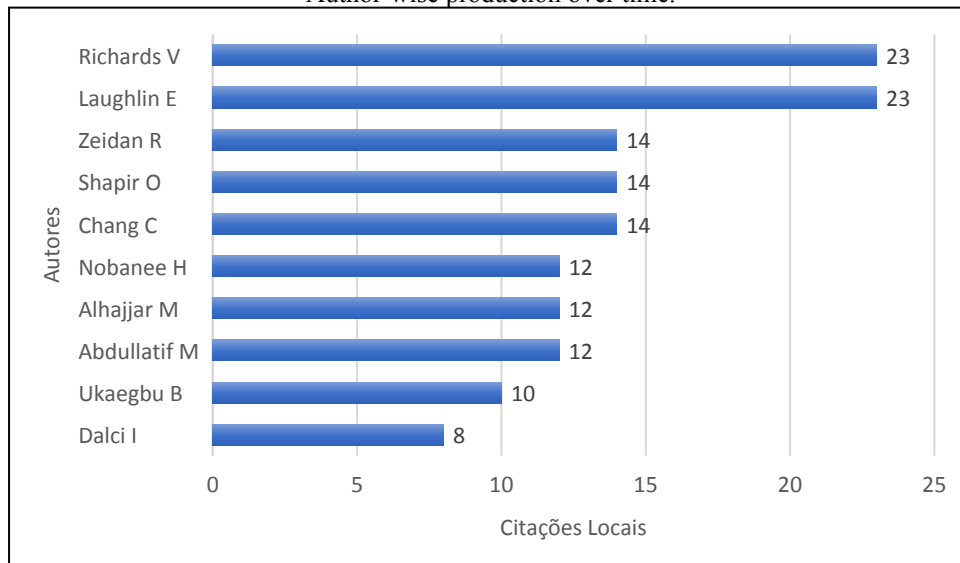
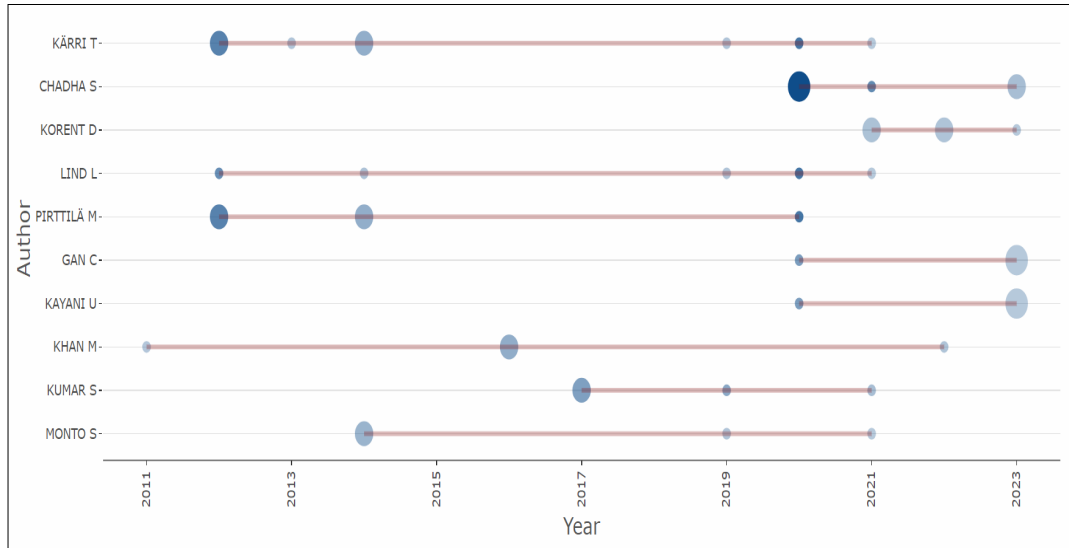


Figure 8
Author-wise production over time.



The local authors with the highest number of citations are presented in Figure 8, with emphasis on the seminal work of Richards and Laughlin (1980) titled 'Cash Conversion Cycle Approach to Liquidity Analysis,' which theorized the cash conversion cycle with 23 citations. Figure 9 displays the publication timeframe of the most relevant authors.

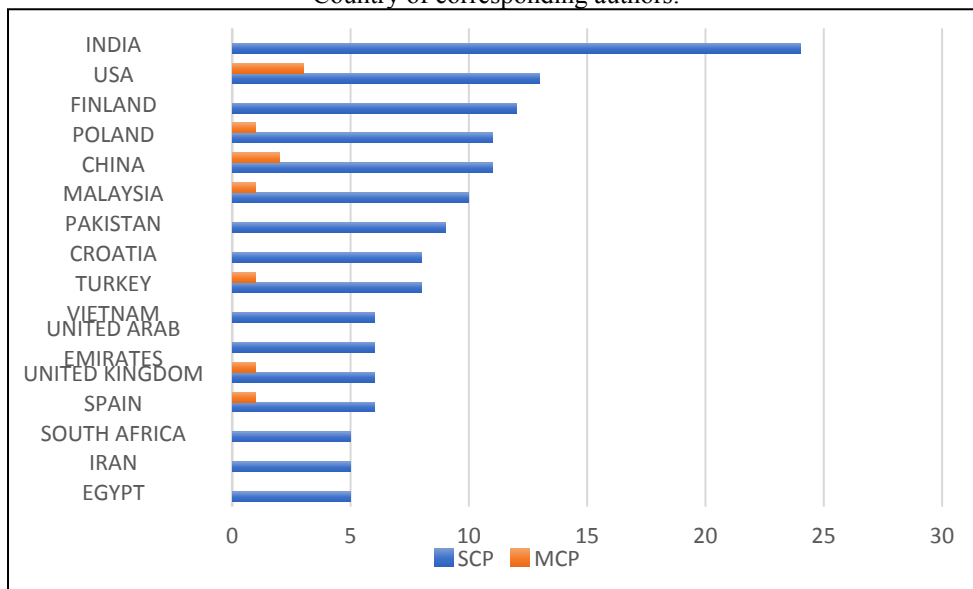
Figure 9
Publication interval by author.



Authors with the highest publication count, highest local citations, and highest global citations.

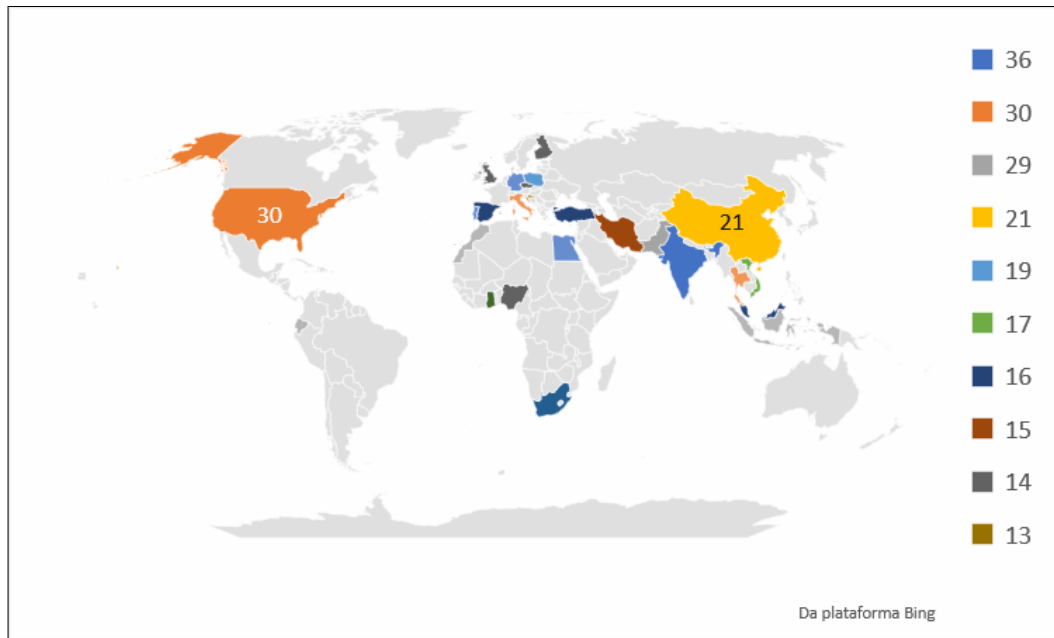
The classification of the countries to which the authors belong is demonstrated in Figure 10, where SCP refers to works with authors affiliated with a single institution in a single country, and MCP refers to works with authors affiliated with institutions from different countries.

Figure 10
Country of corresponding authors.



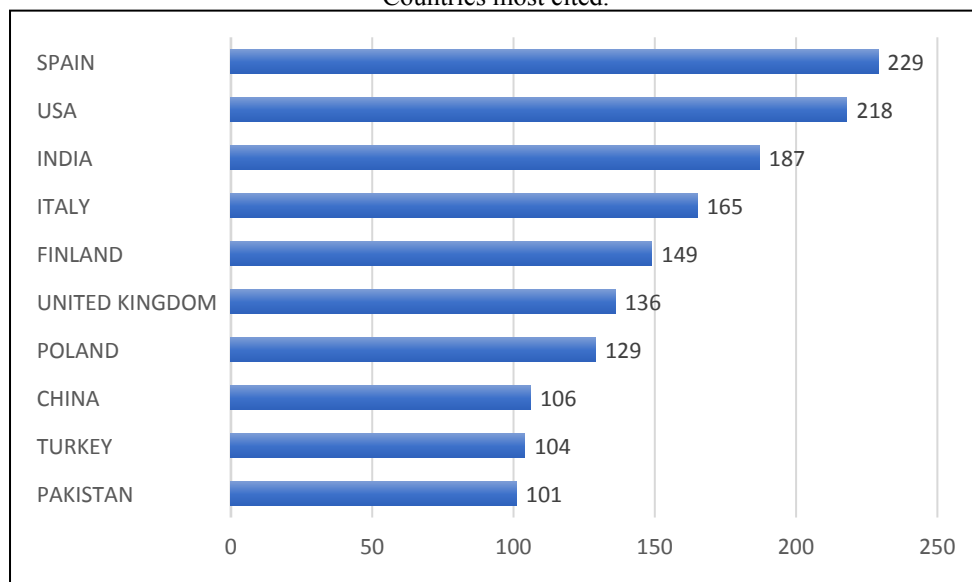
As observed in Figures 10, India stands out in authorship with 24 relevant publications, followed by the United States with 13 studies. It is noteworthy that China, which usually ranks first or second in other research areas in business and finance, appears only in fifth place. Additionally, the position of studies by Finnish and Polish authors is notable, with 12 and 11 works, respectively.

Figure 11
Production by country.



In terms of global publication, the contribution of each country to the research field investigated in this article is as follows: India with 36 publications, the United States with 30 publications, China with 21 publications, Turkey with 16 publications, and Iran with 15 publications. These five countries together represent 40% of all scientific production related to the Cash Conversion Cycle (CCC). It is important to note that in Brazil, this field of study lacks research, with only three studies throughout the analyzed period.

Figure 12
Countries most cited.

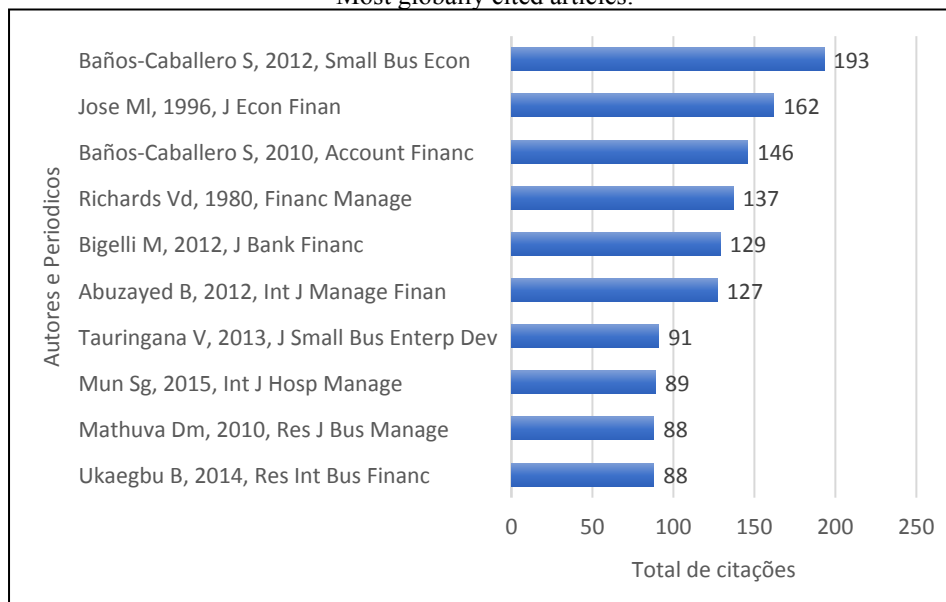


In terms of significant influence by citations, Figure 12 depicts the countries that have contributed the most to the research field on the Cash Conversion Cycle (CCC). Spain has 229 citations, followed by the United States with 218. This indicates that researchers from these countries have had a significant impact on the field, and their contributions have been widely cited in the literature.

Most globally cited articles.

The studies that received the highest number of citations throughout the examined period, thus highlighting their relevance and quality to the research field, are demonstrated in Figure 13. These studies are recognized for their importance and impact in the scientific and academic community, featuring the top 10 most relevant studies.

Figure 13
Most globally cited articles.



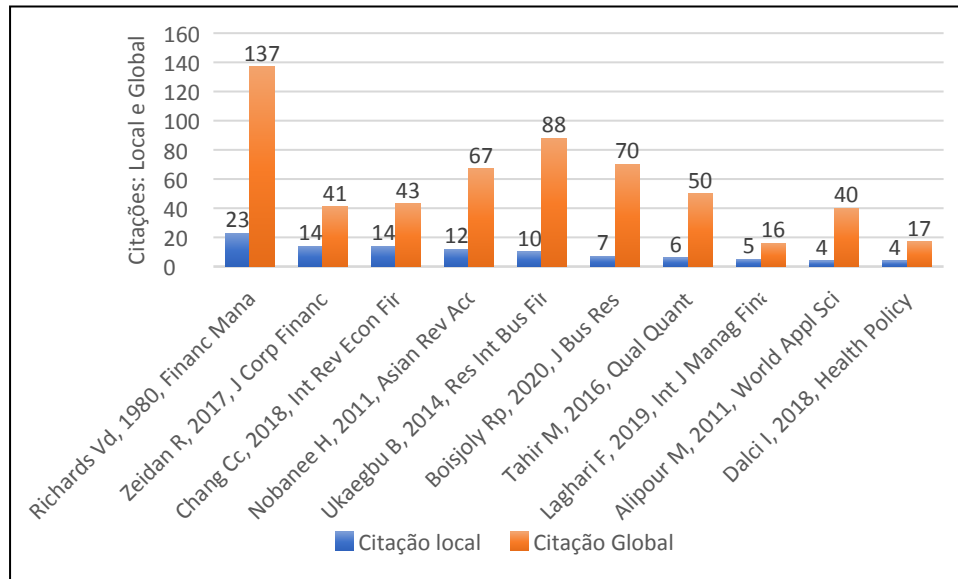
The most relevant work on the global scale is the study by Baños-Caballeiro et al. (2012), published in the journal *Small Business Economics*, with 193 citations, an average of 16.8 citations per year, and an impact factor of 3.53. Baños-Caballeiro contributed to the field with another study in 2010, which ranks third in the top 10 most relevant studies. The study by José et al. (1996) and that of Richards and Laughlin (1980), two seminal works, appear in second and fourth place, with 162 citations and 146, respectively.

The research by Baños-Caballero et al. (2012) analyzed the relationship between working capital and profitability for SMEs, controlling for unobservable heterogeneity and possible endogeneity. The results, unlike previous studies, demonstrate a non-linear relationship between working capital and profitability, indicating a concave monotonic relationship. As a measure of working capital management, the authors used the cash conversion cycle, emphasizing that it is a more applicable measure than the current liquidity ratio. Baños-Caballeiro et al. (2010) explored the size of the cash conversion cycle, providing empirical evidence of the existence of a target cash conversion cycle to which companies try to converge, adjusting quickly to this target. The results of their research indicate that older companies with higher cash flows maintain a longer cash conversion cycle, while companies with more growth opportunities, higher leverage, investments in fixed assets, and return on assets maintain a more aggressive working capital policy, i.e., a shorter cash conversion cycle.

José et al.'s (1996) research brought a new contribution to the working capital management literature by analyzing long-term balance measures of efficiency and profitability in working capital management. They strongly argued that more aggressive liquidity management, i.e., a lower cash conversion cycle (CCC), is associated with higher profitability. In their research, the author included sectors such as Natural Resources, Industry, Services, Retail, Wholesale, and Professional Services. According to the author, for all sectors, there is a statistically significant inverse relationship between the CCC and profitability, emphasizing that this relationship is not driven by firm size.

The research by Richards and Laughlin (1980) presented a conceptual approach, providing constructive criticism of statistical models assessing the liquidity position of companies. In their study, they argued that the addition of a turnover ratio for accounts payable, with the calculation of the cash conversion cycle, adds a dimension that provides more comprehensive insights into working capital management and liquidity analysis. This concept and approach can be observed in various studies developed based on the work of Richards and Laughlin.

Figure 14
Authors with the most local citations.



Considering local citations, the seminal work by Richards and Laughlin (1980) is the most relevant with 23 citations, followed by the study of Zeidan et al. (2017) with 14 citations, and Chang (2018) also with 14 citations.

The research by Zeidan et al. (2017) conducted a case study at MRV company in Brazil to investigate excessive working capital investment in inefficient businesses. The results of their research suggest that managing the cash conversion cycle, controlling for effects on operating margins, leads to higher stock prices, increased profitability, and enhanced cash flow.

On the other hand, Chang's (2018) research sought global evidence on the Cash Conversion Cycle (CCC) and corporate performance. The results indicate a negative relationship between the CCC, profitability, and firm value, which, according to the author, supports the idea of an aggressive working capital policy to enhance corporate performance, i.e., a lower CCC.

IV. Analysis And Discussions.

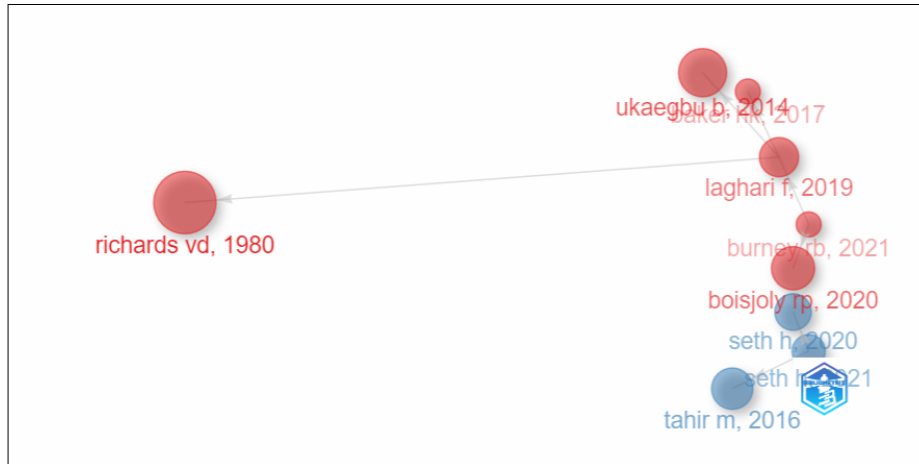
Current stage of research on the Cash Conversion Cycle (CCC)

As demonstrated in the previous sections, the study by Richards and Laughlin (1980) was essential for the development of new research. Despite the long time that has passed since these studies (39 years), the arguments, foundations, and methodology for calculating the cash conversion cycle presented by Richards and Laughlin are evident in all subsequent studies. This highlights the lasting influence and importance of this seminal work in the field of working capital management.

Therefore, this research field does not lack exploration for the development of the conceptual framework, as there is unanimity among studies in defining the Cash Conversion Cycle (CCC) as the time between the disbursement for the purchase of goods and products and their respective receipt from the sale of such goods and products (Ahangar, 2020); Baños-Caballero et al., 2013; Chang, 2018; Chauhan & Banerjee, 2018; Dash, 2020; Firsman & Raturi, 2004; Haron & Nomran, 2016; Koliass et al., 2020); Mahmood et al., 2022; Mahmood et al., 2021; Mun E Jang, 2015; Mutua Mahuva, 2014; Oseifuah et al., 2011; Valipour et al., 2012; Wang, 2019; Yazdanfar And Öhman, 2014; Zeidan & Shapir, 2017).

Figure 2

Seminal study by Richards and Laughlin (1980).



As observed in Table 1, the formula for calculating the Cash Conversion Cycle (CCC) has variations that do not represent significant impacts on the results. Some studies use the fiscal year of 360 days, while others use the calendar year of 365 days. There are inversions of denominators, but nothing that could bring significant impacts on the results of the studies when using formulas as presented. It is important to note that most studies follow the model proposed by José et al. (1996), which differs from the work of Richards and Laughlin (1980) only in terms of the calendar year compared to the fiscal year.

Table 1
Measurement do CCC

Abbreviation	Definition	Measurement	Reference
CCC	Cash Conversion Cycle		Richards e Laughlin (1980) Fejzullahu & Govori (2020)
			José et al. (1996); Özbayrak & Akgün (2006); Tsai (2007) Amponsah-Kwatiah et al. (2020) Banerjee et al. (2021); Vlismas (2023); Carnes (2023)
			Enqvist et al. (2014)
			Kling et al. (2014)
			Linh & Mohanlingam (2018)
			Tan & Taluca (2019)
			Pirttila et al. (2020)
			Demiraj et al (2022)

Mathematically inclined studies criticize the Cash Conversion Cycle (CCC) on the premise that its calculation is incorrect, as it involves more than one denominator with unequal sizes, as pointed out by Linh and Mohanlingam (2018). In response to this critique, studies focusing on working capital management have segregated the three determinants of the CCC (Days Sales Outstanding, Days Inventory Outstanding, and Days Payable Outstanding) to separately measure their relationship with working capital management and their effect on performance. This expands the mathematical modeling for better accuracy of the analysis. However, there is a convergence in pointing out that there is no significant difference when analyzing the determinants in relation to the CCC (Laik & Mirchandani, 2021; Mahmood et al., 2021, 2022; Ren et al., 2019; Tangsucheeva & Prabhu, 2013).

The stage of research on the Cash Conversion Cycle (CCC) has been directed towards measuring the efficiency of working capital management. According to Yazdanfar and Öhman (2014), efficient management of the CCC allows greater control over working capital and short-term investments. For Mahmood et al. (2022), the sensitivity of firm performance to short-term debts varies as the CCC period fluctuates. Despite some studies investigating the determinants of the CCC (Valipour et al., 2012; Baños-Caballero et al., 2012; Mutua Mahuva, 2014; Haron & Nomran, 2016; Chauhan & Banerjee, 2018; Dash, 2020; Koliass et al., 2020), the speed

of adjustment and the determinants of the CCC are fields that still need to be explored in studies (Ahangar, 2020).

In this context, Zaher and Illescas (2022) highlight that, despite the empirical evidence from studies, there is no convergence regarding the relationship between the Cash Conversion Cycle (CCC) and firm performance. According to the authors, the CCC can be influenced by internal factors such as fixed assets, governance, cash flow, and firm size, as well as external factors such as industry conditions, regulations, and the economic environment. According to Goel and Sharma (2015), macroeconomic indicators have a lesser effect on the CCC when compared to firm-specific factors such as leverage, tangibility, profitability, growth, size, and age of the firm. As stated by Baños-Caballero et al. (2010), older companies with higher cash flow have a longer CCC, while companies with more growth opportunities, higher leverage, fixed assets, and return on assets maintain a shorter CCC.

The literature on the Cash Conversion Cycle (CCC) presents empirical evidence for two directions or theoretical currents, one arguing that a short CCC leads to better performance, thus indicating a negative relationship between the CCC and performance (Dong & Su, 2010; Eljelly, 2004; García-Teruel & Martínez-Solano, 2007; Jose et al., 1996; Mathuva, 2014; Mathuva, 2015; Ngwenya, 2010; Oseifuah & Gyekye, 2016; Uyar, 2009; Wang, 2002); another current suggests that a long CCC results in better performance, indicating a positive relationship (Fejzullahu & Govori, 2021; Lee et al., 2023; Panigrahi, 2013; Thakur & Kaur, 2015; Tiwari et al., 2023). These contradictions highlight the need for new studies with models, variables, and premises not yet explored in existing research.

In the same debate, the concepts of aggressive and conservative working capital management emerge, where being aggressive means shortening the Cash Conversion Cycle (CCC), and conservative means prolonging it. Increasing the credit period given to customers may result in increased sales, leading to an increase in inventory levels to meet demand. As a result, companies may negotiate better terms with their suppliers. Therefore, in such cases, extending the CCC (conservative) can contribute to improving firm performance (Manoori & Muhammad, 2012; Palombini & Nakamura, 2012; Rimo & Panbunyen, 2010; Valipour et al., 2012; Zariyawati et al., 2016).

On the other hand, extending the CCC generates greater cash demand since the period for the return of the resources allocated for inventory purchase will be longer. Additionally, inventory turnover may not occur as expected, increasing the risk of default and the possibility that the supplier will not grant an extension of the credit period (Chang, 2018; Firsman & Raturi, 2004; Mahmood et al., 2021; Mahmood et al., 2022; Mun E Jang, 2015; Nobanee et al., 2011; Wang, 2019; Yazdanfar & Öhman, 2014; Zeidan & Shapir, 2017).

For Chiou et al. (2006), a shorter CCC results in greater efficiency in working capital management and liquidity, providing more cash slack. Jamalinesari and Soheili (2015) emphasize that short-term decisions of the company are related to liquidity and working capital management for the composition of operational assets and liabilities. In most studies on the CCC, better performance is attributed when the CCC is lower, that is, more aggressive (Chang, 2018; Mahmood et al., 2022). The justification for this, besides faster cash generation, is that lower dependence on external financing sources can have a positive impact on operational performance, thus resulting in a negative relationship between the CCC and firm performance (Jose et al., 1996; Wang, 2002).

As evident from the discussion, the existence of a relationship between the CCC and performance is clear, although results do not converge regarding the size of the CCC, that is, whether a more aggressive or conservative CCC results in better firm performance.

The effect of business strategy on the relationship between the CCC and firm performance.

The previous section presented results, debates, and current directions in CCC research. The quest for convergence and a definitive understanding of conservative or aggressive working capital management seems far from reaching a consensus. For this reason, this literature review identified the absence of exploration of business strategy and competition in the product market in studies investigating the relationship between CCC and firm performance. Therefore, it seems reasonable to conclude that this gap won't be filled by new mathematical models, but other approaches can be explored. It's worth noting that most studies use ordinary least squares (OLS) regression models and panel data, but various other methods such as natural experiments, logistic regression, non-parametric analysis, simulations with mathematical modeling, dynamic panels, balanced panels, and time-series analysis were also identified.

Surprisingly, in the analyses of keywords, research suggestions, and empirical results, there was no mention of business strategy and competition in the product market, which naturally are factors that affect the entire capital structure of the company. According to Enqvist et al. (2014), working capital management needs to be incorporated into financial plans and the company's strategy. Organizational theory emphasizes that business strategy influences the performance of the company, explaining how companies compete in their market environments to achieve performance goals (Handoyo, Suharman et al., 2023; Jukka, 2023). According to Bentley et al. (2013), there are various typologies of strategies described in the literature that explain how

companies compete in the market. According to Dvosrky et al. (2020), adopting the right business strategy allows the company to improve its performance. Therefore, it is observed that the business strategy literature documents in various studies the relationship and effect on company performance (Arif et al., 2022; González-Rodríguez et al., 2018; Latifah et al., 2021; Martínez-Simarro et al., 2015; Martins et al., 2014; Parnell, 2010; Sabherwal & Chan, 2001; Ukko et al., 2019).

Therefore, since the CCC is influenced by both internal and external factors (Goel & Sharma, 2015; Zaher & Illescas, 2022), and considering that business strategy is determined by both internal and external factors (Ameer & Othman, 2021), Yilmaz and Nobanee (2023) highlight that working capital management policy should be aligned with the business strategy. Moreover, this strategy should pay greater attention to the components of the CCC with the aim of improving firm performance.

As highlighted by Houqe et al. (2023), despite the importance of the relationship and the impact of business strategy on firm cash, this relationship has remained largely unexplored in studies. Vlismas (2023) provides evidence of a moderating relationship of business strategy in the link between working capital management and firm performance. Therefore, it is expected that business strategy will act as a moderator in the relationship between the CCC and firm performance.

V. Conclusion

This article, through a literature review covering the period from 1974 to 2023, sought to identify research directions on the cash conversion cycle and potential gaps in the research field to suggest new studies. The analysis of the studies reveals the importance of the Cash Conversion Cycle (CCC) as an indicator of efficiency in working capital management for companies.

The data reveals that from the theorization of the CCC by Richards and Laughlin (1980) until the moment when the concept effectively caught the attention of researchers, there was an interval of 39 years. This suggests that the field of research on the CCC is relatively new and requires further exploration, including studies that combine methodologies, variables, and modeling to broaden and enrich the research field.

Although studies from the last 15 years provide empirical evidence regarding the relationship between the CCC and firm performance, there is still no consensus on the ideal size of the CCC. The question of whether an aggressive policy with a short CCC or a conservative policy with a long CCC brings a better effect on performance remains under debate.

The analysis of these studies highlights the overlooked connection between business strategy and competition in the product market with the CCC. With the exception of the recent research by Vlismas (2023), which provides evidence of the moderating effect of business strategy on the relationship between working capital management and firm performance, other studies have focused only on investigating the direct relationship between the CCC and performance. They did not explain which factors influence this relationship and how they influence it, despite acknowledging that the CCC is affected by internal and external factors (Goel & Sharma, 2015; Zaher & Illescas, 2022).

Indeed, it seems reasonable to assume that the CCC is influenced by a variety of internal and external factors, much like the business strategy of the firm. Therefore, the quest for a more comprehensive understanding of the relationship between the CCC and performance needs to consider not only financial aspects and mathematical modeling but also incorporate both business strategy and product market competition.

Therefore, considering that the CCC is a growing research field, future studies may explore how the business strategy acts as a moderator in the relationship between CCC and firm performance, and how competition in the product market interferes or adjusts the specific and combined effects of this relationship.

These proposed research directions in this article can contribute to the scientific and practical field, providing insights for financial and strategic decision-making. It is emphasized that efficient management of the CCC should be aligned with the business strategy of the firm.

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