

**EXAMINING THE WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF
SMALL PUBLICLY TRADED CORPORATIONS IN NORTH AMERICA**

by

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Abstract

Working capital management (WCM) is the foundation of a corporation's daily operations. About two thirds of small publicly traded corporations in the U.S. fail within two years. The dissertation research questions are designed to examine the extent of the relationship between WCM and profitability and the relationship between liquidity and profitability in small, publicly traded corporations in North America. While there is a vast amount of literature on WCM and profitability, there is very little research on small publicly traded corporations in North America. This quantitative correlational study sampled financial statements for 420 small publicly traded corporations. The researcher used the IBM SPSS v27 statistical tool to perform a descriptive statistical and quantitative analysis of the data. The research findings of Kendall's tau-b revealed that there is no statistically significant relationship between WCM and profitability. However, there is a positive, statistically significant relationship between liquidity and profitability. Therefore, this research recommends stopping efforts into future research around WCM and profitability with this population. Future research efforts should investigate the impact that credit management practices or policies have on profitability.

Dedication

This dissertation is dedicated to Margaret Breland, who instilled in me to “get done.” I could not have gotten it done without the help of my family and friends. Specifically, my mom, sister, and aunt, who helped take care of my grandchildren, prayed for me and provided words of encouragement to my daughter, Areyana, who kept me going and laughing. To my grandchildren, E’mari and Elijah, a big thanks for your patience and tolerating limited time with grandma. To my pastor, who said, “I do not want to hear any complaining, just get done.” Thank you to my church family and friends who made sure I stayed well fed to do my homework. To my significant other, thank you for staying up with me on countless nights. Thank you to all my family and friends who checked in and cheered me on. Words cannot express the gratitude I have for every last one of you. I love you all. Now, I can officially say that I am done.

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CHAPTER 1. INTRODUCTION

Many small publicly traded corporations have financially suffered due to poor working capital management (Prasad et al., 2019; Rahman et al., 2015; Tran et al., 2017). Michello and Wanorie (2015) stated that small publicly traded corporations must rethink how they manage their working capital in today's competitive environment. Working capital management (WCM), defined as current assets minus current liabilities, is the locus of small publicly traded corporations operating activities (Nastiti et al., 2019). One of the small publicly traded corporations' main goals is to efficiently manage working capital to maximize profits (Paul & Mitra, 2018). Maximizing profits and preserving liquidity are equally essential when making WCM investment and financing decisions. Research has shown that increasing profits at the cost of liquidity can create serious financial problems for small publicly traded corporations (Perera & Priyashantha, 2018). Therefore, small publicly traded corporations must consider the trade-off between liquidity and profitability and minimize the liquidity cost risk. Also, small publicly traded corporations must consider the cash that may get tied up in working capital.

Mazzarol (2014) stated that managing working capital remains a significant problem today as the environment has become even more acute for small publicly traded corporations. Nadeem et al. (2020) stated that the global economic crisis brought awareness among corporations to unlock cash tied up in working capital. According to Wilmoth (2019), 888,000 establishments were closed. Cash tied up in working capital profoundly impacts small publicly traded corporations' bottom-line profitability and is critical for growth and survival (Michello & Wanorie, 2015; Moussa, 2018). Boțoc and Anton (2017) emphasized that small publicly traded corporations can increase available cash for investments and expansion by reducing the amount

of cash tied up in working capital. Therefore, small publicly traded corporations need insight into what management practices to employ and critical measures to monitor to manage working capital effectively. Small publicly traded corporations simultaneously balance working capital components to fund daily operations. Usman et al. (2017) contended that these corporations must have adequate liquidity to support daily operating activities and expenses.

Afrifa (2015) postulated that inadequate WCM insurgency appeared in small publicly traded corporations. Several researchers discussed the severe challenges small publicly traded corporations faced in efficiently managing working capital (Dodge et al., 1994; Ebben & Johnson, 2011). Small publicly traded corporations' success shows how they manage working capital (Rahman et al., 2015). Although there is a plethora of literature on WCM and profitability for all-size corporations across multiple industries, the research specific to managing working capital and profitability is elusive. There is a need for small publicly traded corporations to manage working capital and profitability efficiently. This correlational study examined the WCM and profitability of small publicly traded corporations in North America listed on the NASDAQ.

Background

Small publicly traded corporations make up 99.9 % of the U.S. economy (Justus, 2019). Small publicly traded corporations with 500 or fewer employees or revenue between 300 million to 2 billion dollars strengthen the U.S. economy by providing employment opportunities and improving the U.S. unemployment rate. Small publicly traded corporations' unemployment rate was 4.2 % (SBA Office of Advocacy, 2019). North America accounted for more than one out of

every five small publicly traded corporations establishments created in the country, accounting for a 1.9 % growth rate due to its size (Wilmoth, 2019).

Small publicly traded corporations' establishments reached over a million than the 888,000 small publicly traded corporations' closures (Wilmoth, 2019). Interestingly, about two thirds of small publicly traded corporations in the U.S. fail within two years. More specifically, approximately half fail within five years (SBA Office of Advocacy, 2012). COVID-19 has revealed severe disruptions as unemployment rates have plummeted, reaching over 24 million (Wilmoth, 2020) and increases significant concerns for small publicly traded corporations. Therefore, this research may add to the body of knowledge by examining the WCM and profitability and liquidity and profitability of small publicly traded corporations in North America.

Business Problem and Problem Statment

One of the primary reasons small publicly traded corporations fail is poor WCM (Karadağ, 2018; Tran et al., 2017). Ali et al. (2017) stated that small publicly traded corporations continue to ignore WCM. Small publicly traded corporations cannot ignore WCM because it leads to failure and bankruptcy, so they must consider the liquidity and profitability trade-off (Mohanty & Mehrotra, 2018). As a result, corporations either have insufficient or excessive working capital from poor management. The main goal of WCM is to ensure adequate levels of working capital in such a way that it does not lack or is excessive (Aminu & Zainudin, 2015). Maenuddin et al. (2020) explained that WCM levels could increase during a crisis because of the following: (a) unexpectedly inventory becomes excessive when small publicly traded corporations sales rapidly decline, (b) economic conditions such as unemployment can cause

customers to postpone payments on goods and services, which has a negative impact of a corporations' account receivables, and (c) a decrease in sales and purchases of goods can result in a decrease in account payables. As a result, Şamiloğlu and Akgün (2016) stated that insufficient working capital could create liquidity or operational problems. On the other hand, excessive working capital may decrease the potential risk of liquidity costs. Perera and Priyashantha (2018) argued that increasing profits at the cost of liquidity can create serious financial problems for small publicly traded corporations.

The problem statement is that there is a need for small publicly traded corporations to understand better how to manage working capital and profitability efficiently. Tahir and Ahmad Anuar (2016) stated that having unwarranted liquidity could tie up cash, resulting in a small publicly traded corporation's inability to meet its short-term financial obligations. The components of working capital are accounts receivable, accounts payable, inventory, and cash. WCM means optimizing all these determinants to reduce the amount of unnecessary cash tied up in working capital. This study examined the relationship between WCM and the profitability of small publicly traded corporations in North America. The way small publicly traded corporations manage working capital can significantly affect profitability. The outcomes of this study may help finance scholars, finance managers, and small publicly traded corporations improve their knowledge, skills, and understanding of WCM, including its usefulness. Having a good understanding can improve the way they manage WCM and, eventually, profitability.

Research Purpose

Adam and Quansah (2019) stated that WCM warrants special attention because each working capital component has its costs and benefits. In practice, liquidity indicators, commonly

the current ratio (CR), are used to assess a small publicly traded corporation's ability to pay and the efficiency of WCM. Veronika et al. (2014) argued, still, the problem is that it does not sufficiently account for how long each working capital component tied up the operations. The WCM indicator commonly used in numerous studies is the cash conversion cycle (CCC) that measures each working capital component tied up in working capital. Small publicly traded corporations must keep their finances in line, starting with managing their daily working capital needs to achieve profitability (Daly, 2016). The purpose of this quantitative correlational study is to examine the extent of the relationship between WCM and profitability and the extent of the relationship between liquidity and profitability for small publicly traded corporations in North America. This topic is worth researching because the concept of WCM is gaining ample attention worldwide, especially with today's financial situation due to COVID-19 and the state of the world economy (Adam & Quansah, 2019).

The driving factors disproportionately affecting small publicly traded corporations and their employees across the U.S today are access to capital and the pandemic (Robb, 2018; Wilmoth, 2020). Alvarado et al. (2017) argued that it is easier for larger corporations than smaller corporations to access credit. Afeef (2011), Michello and Wanorie (2015), and Rahman et al. (2015) stated that small publicly traded corporations need to understand WCM investment and financing decisions and credit practices. This research aims to contribute to the body of knowledge relating to managing working capital efficiently, improve profitability, and credit practices critical for their success.

Research Questions

RQ1: To what extent does working capital management relate to profitability in small, publicly traded corporations in North America?

RQ2: To what extent does liquidity relate to profitability in small, publicly traded corporations in North America?

Rationale

Small publicly traded corporations strengthen the U.S. economy by providing employment opportunities and improving the U.S. unemployment rate. Small publicly traded corporations employed 7.1 million or 48.8% of American people (SBA Office of Advocacy, 2019). Small publicly traded corporations are more likely to fail due to vulnerability. They are more likely to use external financing due to limited access to capital such as short-term bank loans, dependence on owner finances, and trade credit (Afrifa & Padachi, 2016; Carroll et al., 2015; Nobanee & Abraham, 2015; Singh & Kaur, 2017). Many small publicly traded corporations' inability to properly manage their working capital has contributed to their failures for decades (Smith, 1973). Small publicly traded corporations' failures result from not having formal and well-managed systems and financial advisors efficiently managing their working capital components (Singh et al., 2017). Most small publicly traded corporations are privately owned and lack sophisticated technology and the required skills to manage working capital. Rouf (2011) pointed out that small publicly traded corporations are less transparent than large corporations and are more likely to withhold information to safeguard their competitive position. Investors are more likely to lend to large corporations because they are more transparent with

their finances. Therefore, it is crucial for small publicly traded corporations to effectively manage WCM to sustain strong financial performance (Kaufman, 2016).

Theoretical Framework

The concepts from the WCM theory, trade-off theory, and hedge theory help to understand the phenomenon of managing working capital and small publicly traded corporations' profitability in North America. Sagan (1955) developed the theory of WCM as a guiding principle for making decisions about managing working capital. Walker and Petty (1978) extended the concept. They argued that small publicly traded corporations face more risk in liquidity and are concerned with capital availability and cost. Small publicly traded corporations must consider the trade-off between liquidity and profitability to minimize the risk of liquidity. The trade-off theory developed by Modigliani and Miller (1963) argued that corporations must maintain an optimal liquidity level to achieve an optimal cash level. Still, to achieve optimal levels, corporations may place profitability at risk. Therefore, small publicly traded corporations' WCM investing and financing decisions matter. In practice, corporations can hedge any positive or negative financial risk. Altuntas et al. (2017) argued that hedging allows corporations to preserve internal capital, prevent underinvestment problems, and increase profits. A small publicly traded corporation that fully hedges its risk can increase its leverage, and as a result, lower the cost of capital while increasing its profits (Amaya et al., 2015).

Significance

This study's significance is to add to the body of knowledge available to small publicly traded corporations seeking to increase their skills and understanding of how to efficiently manage WCM and profitability and the liquidity and profitability trade-off. This quantitative

correlational study provides valuable information to increase small publicly traded corporations' skills and understanding of WCM and its usefulness to maintain its survival. This study's findings may attribute to small publicly traded corporations' success and their knowledge of managing WCM while efficiently increasing profitability for survival.

How corporations manage working capital directly affects the small publicly traded corporations' liquidity and profitability trade-off (Moussa, 2018). This study attempts to provide small publicly traded corporations with a more in-depth understanding of how to efficiently manage working capital and profitability while simultaneously maintaining optimal levels of liquidity (Rahman et al., 2015; Tran et al., 2017). This study's findings may be significant for small publicly traded corporations when developing strategies and processes to manage working capital and profitability efficiently. Small publicly traded corporations may show a different degree of sensitivity to WCM (Afeef et al., 2015). It may also provide insight regarding how WCM has evolved and changed over time and the catalyst driving the change, which small publicly traded corporations should keep in mind.

Definition of Terms

Accounts Payable (A/P): Represents the current liabilities, which involve the cash owed to creditors and represent the obligations to pay for goods and services purchased or obtained through the form of credit (Sagner, 2014).

Accounts Receivables (A/R): Are current assets owe or monies owed to a vendor for goods sold or services administered in advance that is unpaid (Sagner, 2014).

Cash: Cash is the most liquid current assets that corporations can use to meet their short-term obligations (Umry & Diantimala, 2018). Cash is any payment source in coins, currency, checks, or electronic payments (Das, 2015; Sagner, 2014).

Current assets: Are tangible or intangible assets that can convert into cash within a year; fixed assets have a life span higher than a year (Sagner, 2014).

Current liabilities: A line item on the balance sheet shows the amount owed to vendors and lenders. The current liabilities represent payments paid within one year, and the total liabilities are payments due in the past year (Sagner, 2014).

Current Ratio (CR): A financial ratio measures the ability to pay the debt within a year from the debt incurred (Michello & Wanorie, 2015; Sagner, 2014).

Inventory: Also called stock, is the potential stream of cash used in the spare moment. It can also withstand uncertain external effects (Nelson, 1977).

Liquidity: This is the cash used for short-term investments and the operating cash flow and typical small publicly traded corporations environment, including being used as a credit source (Sagner, 2014).

Operating profit to sales: It is composed by dividing operating profit or loss by net sales or net revenues (Michello & Wanorie, 2015).

Profitability: The calculation for profitability measures the net income after taxes and compares the owner's equity or operating profit sales (Sagner, 2014).

Working Capital: Mathematically is the difference between current assets and current liabilities that reflects the amount of cash available to fund a small publicly traded corporation's daily operations (Sagner, 2014).

Assumptions and Limitations

The current study may provide small publicly traded corporations with many insights for managing working capital, but it has some limitations. First, this quantitative ex post facto study solely examines small publicly traded corporations in North America in small publicly traded corporations for less than five years as a sample. The use of public information gives the researcher the capability to minimize the cost of obtaining financial reports. Public financial statements are suitable to analyze financial information to determine a corporations' working capital and liquidity position. Financial statements can also help determine the effect each variable has on profitability.

Second, a significant limitation is a correlation analysis ascertaining whether or not a relationship exists between WCM, profitability, and liquidity and not predicting the future or forecasting the exact nature of that relationship. More attention is required while using the Pearson correlation coefficient because it may not reflect the variables (Bhatia & Srivastava, 2016). The implication with correlations is that the correlation's nature is affected by the measurement levels' assumptions. Distributions assume the relationship between the independent and dependent variables that underlie the data (Cooper & Schindler, 2014). Third, the current ratio measured liquidity to determine to what degree a small publicly traded corporation can repay its short-term liabilities. Using traditional financial ratios such as the current ratio is not as reliable as the past because they do not provide enough evidence (Ebben & Johnson, 2011). Upadhyay and Smith (2016) stated that financial ratios explain how to reduce the amount of money invested in current assets to improve liquidity. Therefore, the researcher used a WCM indicator to capture the complete picture.

Lastly, the operating profit to sales indicator is the proxy used to measure profitability versus using profitability ratios. The implication of using the operating profit to sales as a measurement assumes that it captures the profits generated from small publicly traded corporations' operations. Ball et al. (2016) stated that using the operating profit to sales as a proxy for profitability can explain expected cash flow as far as ten years into the future. The implication is that small publicly traded corporation can plan their future investments and determine their financing sources in advance, making it easier to manage.

Organization for Remainder of Study

There are four additional chapters included in the remainder of this study. Chapter 2 includes the base theories in the study, literature review, provides the research foundation, and supports the small publicly traded corporation's problem. Chapter 3 summarizes the study's research design and methodology, including the type of participants, setting, sampling techniques, data collection and analysis procedures, assumptions, credibility and dependability, and ethical consideration.

CHAPTER 2. LITERATURE REVIEW

The Small Business Administration (SBA) maintains a significant amount of files about opened and closed establishments. According to the data, small publicly traded corporations' negative profitability results in loss of sales and late or nonpayment customers. How small publicly traded corporations manage their working capital is vital for good solvency and liquidity levels to sustain their very existence (Rahman et al., 2015). Scott (2016) argued for small publicly traded corporations to cope with the loss of sales and late or nonpayment from customers. They must have acceptable credit management practices. Small publicly traded corporations need to develop the right managerial approach to ensure their small publicly traded corporations survive severe liquidity problems (Karaoulanis, 2020). A significant amount of literature exists about WCM and profitability (Michello & Wanorie, 2015; Rahman et al., 2015; Tran et al., 2017). However, the current issue is that there is a need for small publicly traded corporations to understand better how to manage working capital and profitability efficiently.

Suppose a small publicly traded corporation's success or failure depends on managing working capital and profitability. Why is there not more scholarly literature about how to efficiently manage working capital and profitability? What working capital policies are small publicly traded corporations currently following? Small publicly traded corporations have a better chance of surviving if they understand the concept of managing working capital and profitability. Small publicly traded corporations' financial decisions relating to investing and financing working capital can significantly impact their bottom line. There is a need for small publicly traded corporations to manage working capital and profitability efficiently. The remaining sections discuss how to manage working capital and profitability. It includes the

methods of searching, driving theories, the concept of working capital, WCM components, WCM investment and financing decisions, WCM policies, sources for financing working capital, receiving, and extending credit. It discusses how WCM changes over time, how research on the topic is evolving. It covers other authors who have studied this topic, catalysts of change, and their significance to WCM and profitability and concludes with a summary analysis.

Methods of Searching

Several databases, such as ProQuest, Science Direct, ABI/Inform Collection, and Summon, including journals, dissertations, e-books, newspapers, reports, and Google Scholar were search engines used to collect this research study resources. Including magazines (e.g., CFO magazine and Forbes) and internet searches. Keywords such as WCM, profitability, liquidity, WCM theories, hedge theory, trade-off theory, current ratio, small publicly traded corporations, small enterprises, small publicly traded corporations, WCM components, current liabilities, current assets, financial statements, financial ratios, WCM decisions, WCM policies, WCM financing, WCM investments, and credit management.

Driving Theories

Second, WCM theory, trade-off theory, and hedge theory may explain the effect WCM has on profitability and a corporations' ability to manage working capital efficiently. These driving theories can improve small publicly traded corporations' understanding of managing working capital and profitability efficiently. Smith (1973) stated that WCM is a valuable financial tool. Small publicly traded corporations can use WCM indicators to plan, monitor, control, and make short-term financial decisions about current assets and current liabilities used to finance a small publicly traded corporation's capital investments daily operations. WCM

investments allow corporations to generate profits to enhance sustainable growth Nastiti et al. (2019).

Working Capital Management Theory

WCM theory focuses on short-term investment and financing decisions of a corporations' current assets and current liabilities. Moussa (2018) explained that investment decisions involve plans related to current assets (working capital) investment levels. In contrast, financing decisions focus on the short-term (financing needs for working capital). Sagan (1955) developed the WCM theory and expounded on it by Walker and Petty (1978). The WCM theory implies that WCM is critical for all corporations, significantly smaller corporations. WCM is needed to survive and grow because of its potential effect on profitability and liquidity available to support the corporation's daily operations and ability to cover operating expenses (Michello & Wanorie, 2015; Pais & Gama, 2015; Şamiloğlu & Akgün, 2016; Singh et al., 2017). The foundation of the theory of WCM centered around the trade-off between profitability and risk, which is related to the levels of current assets and current liabilities (Afrifa & Padachi, 2016; Mohamad et al., 2017; Rehman et al., 2015; Singhania et al., 2014). This theory posits that small publicly traded corporations can profit by managing their working capital (Tran et al., 2017).

Trade-Off Theory

The trade-off theory developed by Modigliani and Miller (1963) inferred that to achieve an optimal cash flow. Small publicly traded corporations must consider the opportunity cost involved in cash holding and the benefits of such activities. Bendavid et al. (2017) argued that efficient WCM focuses on the trade-off between liquidity and profitability; holding excessive cash for operations can lead to smaller returns from long-term investments. Waema and Nasieku

(2016) pointed out that excessive cash holding can cause a small publicly traded corporation's profitability to decline. According to Myers and Majluf (1984), the trade-off theory implies no optimal cash holding levels. Tahir and Ahmad Anuar (2016) argued that small publicly traded corporations aim to attain optimum liquidity levels to balance the cost and benefit of having sufficient cash on hand.

The trade-off theory posits that liquidity and profitability are equal when making investment and financing decisions because WCM plays a critical role in a corporation's profitability, risk, and value. Yunos et al. (2015) argued that maintaining adequate liquidity has a trade-off effect on a corporations' profits due to the opportunity cost of pursuing profitable investments. Smith (1980) pointed out that liquidity and profitability must balance out because WCM plays a critical role in corporations' profitability, risk, and value. Mohanty and Mehrotra (2018) stated that small publicly traded corporations maintain a moderate liquidity level that allows for adequate profits to generate from their investments. Baker et al. (2017) and Juan García-Teruel and Martínez-Solano (2007) argued that small publicly traded corporations assess their anticipated profitability and risk before determining how to make an excellent investment in working capital components.

Bendavid et al. (2017) stated that working capital policies are adopted to achieve an optimal trade-off between liquidity and profitability and the ability to pay for current liabilities under a clearly defined hedging framework. Le et al. (2018) explained that corporations possess an optimal cash ratio in the context of the trade-off theory because it balances the marginal benefits and the marginal cost of cash holding. Several researchers, Bendavid et al. (2017), Modigliani and Miller (1963), Mohanty and Mehrotra (2018), Waema and Nasieku (2016), Ware

(2015), contend WCM must always consider the trade-off between profitability and liquidity.

Sen and Pradhan (2016) added that corporations' could resolve the trade-off between profitability and liquidity by achieving optimal and adequate working capital.

Hedging Theory

The hedging theory developed by Johnson (1959) can explain how small publicly traded corporations use credit management techniques to hedge the risk of liquidity cost. Nikolov et al. (2019) stated that effective credit management practices give small publicly traded corporations the flexibility to use credit lines to offset the liquidity cost. Credit lines are likely more cost-effective than cash holding, precautionary savings against adverse profitability shocks, and used to fund future growth opportunities (Acharya et al., 2014). Campello et al. (2011) argued that small publicly traded corporations have limited credit access and are unprofitable if their sales are below \$1 billion. Therefore, small publicly traded corporations need to monitor their liquidity levels (current ratio) found on the balance sheet to determine the amount of credit to lend to customers. Small publicly traded corporations can use financial ratios and other measures to examine their liquidity (Patrone & du Bois, 1981).

Trade credits are another hedging technique used for a competitive advantage (Chod et al., 2019). Small publicly traded corporations can take advantage of trade credits. Trade credits are a valuable source of financing for corporations facing liquidity shocks or at risk of distress because it allows corporations the opportunity to renegotiate concessions with suppliers (Abdulla et al., 2017). Fabbri and Klapper (2016) argued that trade credits constitute a significant funding source for small publicly traded corporations. Wilson (1999) stated that trade credits allow corporations to receive deferred payment goods and services, allowing corporations time to pay.

For example, trade credits are usually intermittently granted for 30 – 60 days (Otto, 2018). Small publicly traded corporations potentially could lose sales by offering customers cash-on-delivery and cash-before-delivery payment terms. These payment terms can affect the demand for trade credits (García-Teruel et al., 2014). Therefore, corporations must hedge the risk of losing sales while generating a profit.

Connecting Driving Theories

WCM theory, trade-off theory, and hedge theory connect theories that the researcher identifies to manage working capital efficiently. The WCM theory, critiqued by Sagan in 1955, focuses on making short-term investment and financing decisions. Investment and financing decisions are the lifeblood for all corporations' survival and growth. When small publicly traded corporations make investment and financing decisions, the decisions must consider the trade-off between liquidity and profitability to optimize liquidity and profitability to preserve liquidity. The hedge theory connects WCM and trade-off theory through the means of credit management practices. Acceptable credit management practices can protect small publicly traded corporations from potential losses and existing financial activities or investments. Acceptable credit management practices also can help stabilize cash flow. The central concept these three theories, WCM, trade-off, and hedge, have in common is maximizing profits.

Working Capital Management

Third, WCM, also known as net working capital, has been upswing since the financial crisis. It has been neglected from a small publicly traded corporation's perspective and is relatively underdeveloped (Talonpoika et al., 2016). There is a need for small publicly traded corporations to manage their working capital and profitability efficiently. One way for small

publicly traded corporations to manage their working capital and profitability is to understand what WCM truly is. WCM is the difference between a small publicly traded corporation's current assets minus current liabilities. WCM is a strategy to make short-term decisions to manage working capital activities to sustain its operations (Chauhan, 2019). Moussa (2018) argued that WCM deals with any problems relating to managing the intercorrelation between current assets and current liabilities. Efficient WCM is based on short-term financing decisions and is imperative for maintaining an optimal balance between a small publicly traded corporation's liquidity and profitability (Panda & Nanda, 2018).

Nazir and Afza (2009) postulated that many small publicly traded corporations struggle with understanding the role of WCM and how to manage it efficiently while simultaneously increasing profitability. Afeef et al. (2015) and Michello and Wanorie (2015) contended that WCM profoundly impacts the profitability of small publicly traded corporations' performance and survival. Compared to large corporations, a substantial proportion of small publicly traded corporations' total current assets constitutes current assets. In contrast, a sizeable fraction of their total current liabilities are current liabilities. Singh et al. (2017) implied that WCM is a critical factor for any small publicly traded corporation's survival and growth because it affects profitability and liquidity available to conduct a corporation. WCM can be a challenge since it controls and monitors account receivables, accounts payables, and inventory, including cash flow (Singh & Kaur, 2017).

The seminal work of Richards and Laughlin (1980) introduced the widely used measurement tool to measure WCM and its components. Michello and Wanorie (2015) stated that WCM indicators such as the CCC measure working capital efficiency. In contrast, liquidity

indicators such as the CR can determine a small publicly traded corporation's liquidity level and its ability to repay its current short-term liabilities. Mathematically, the CCC equation is $CCC = \text{Receivables Collection Period (RCP)} + \text{Inventory Conversion Period (ICP)} - \text{Payables Deferral Period (PDP)}$. In contrast, the current ratio equation is $CR = \text{Current Assets} / \text{Current Liabilities}$.

In accounting, current assets are assets such as receivables, inventory, or cash that last or can resolve within a year or less. Current liabilities, known as debts, are deferred dividends, trade credits, and unpaid taxes due for payment within a year (Qamar, 2014). If the net current assets must exceed its current liabilities, avoid running the risk of being unable to pay its creditors upon payment request (Managing working capital, 2014). On the other hand, if the current liabilities surpass current assets due to the fixed asset-property, plant, and equipment investment, the WCM is negative. Singhania et al. (2014) explained that this indicates that the small publicly traded corporation received advanced payments.

Small publicly traded corporations can remain resilient and improve their financial performance by being attentive to factors affecting their WCM and sales profits (Haron & Nomran, 2016; Knauer & Wöhrmann, 2013). A small publicly traded corporation's profit is an essential financial performance indicator that assesses a small publicly traded corporation's financial performance, growth, and survival (Batra & Kalia, 2016). The equation for profit is $\text{profit} = (\text{Sales} - \text{Expenses}) \div \text{Sales}$.

Albandag and Elbendak (2018) argued that approximately 26% of financial performance variations allot to WCM. Zariyawati et al. (2017) argued that the effect WCM has on financial performance depends on the size of the corporation. The main concern of WCM is to ensure adequate levels of working capital in such a way that it does not lack or become excessive

(Aminu & Zainudin, 2015). Kumaraswamy (2016) argued that the goal of WCM is to increase corporations' liquidity and profitability. The objective of WCM is to maintain sufficient cash flow to support the daily operations and minimize the risk of the inability to repay their short-term obligations and operational expenses (Şamiloğlu & Akgün, 2016). Rahman et al. (2015) stated that efficient WCM could minimize the short-term capital cost and maximize productivity that affects a small publicly traded corporation's profitability. Nobanee and Abraham (2015) argued that corporations could reduce their financing costs or free up more cash for long-term investments by minimizing their current asset investment.

The working capital levels directly link to the trade-off between net current assets' profitability and the ability to pay for current liabilities under a clearly defined hedging framework (Bendavid et al., 2017). If small publicly traded corporations ignore their profitability, it impacts their long-term survival. On the other hand, if a small publicly traded corporation ignores its liquidity, it may risk becoming insolvent (Masri & Abdulla, 2018). WCM has close implications with two important determinants that measure corporations' overall success – profitability and liquidity.

Working Capital Management Components

Fourth, small publicly traded corporations must understand each component that makes up working capital to efficiently manage their working capital and corporation. Short-term WCM components consist of accounts receivable, accounts payable, inventory, and cash (Michello & Wanorie, 2015; Şamiloğlu & Akgün, 2016). The most critical component of working capital is accounts receivable because its related to cash and credit sales. Singh and Kaur (2017) argued that managing WCM can be challenging since it involves controlling and monitoring account

receivables, inventory, account payables, and cash. Chauhan (2019) argued that these components turn over in operation multiple times within a year for many corporations. Understanding the risk involved with investing in all working capital components is crucial to making investment and financing decisions (Waema & Nasieku, 2016).

The most critical component of working capital is accounts receivable because its related to cash and credit sales. Continuous changes in cash and credit sales make it challenging for small publicly traded corporations to obtain financing. Jain and Godha (2014) stated that the size and scale and increased competition have increased corporations offering credit and create a shortage of access to capital. Although small publicly traded corporations face challenges in securing financing access, many small publicly traded corporations access finance through equity and debt (Harel & Kaufmann, 2016). Therefore, small publicly traded corporations' WCM investment and financing decisions may directly impact a small publicly traded corporation's profitability (Tran et al., 2017).

Working Capital Management Investment and Financing Decisions

Fifth, small publicly traded corporations must know how to manage their working capital and profitability to support their daily operations regarding investment and financing decisions. Sen and Pradhan (2016) explained that WCM investment decisions relate to how small publicly traded corporations' limited resources are investments in working capital. On the other hand, WCM financing decisions pertain to the financing of working capital investments. Makina and Wale (2016) stated that small publicly traded corporations' investment decisions are independent of their financing decisions in perfect markets. Their internal and external finance sources are substitutes for each other. Laghari and Chengang (2019) stated that other factors such as

financing cost, access to capital markets, and internal finance availability influence corporations' working capital investment decisions. Small publicly traded corporations' investment and financing decisions depend on their access to external financing, typically limited or more costly than internal financing (Laghari & Chengang, 2019). Tyagi and Nauriyal (2017) opined that profits influence investment decisions. Regis (2018) argued that small publicly traded corporations having access to credit influence their investment and financing decisions.

When it comes down to making investment and financing decisions, the investment in working capital depends on a small publicly traded corporation's financial condition (Banos-Caballero et al., 2014). The seminal work of Cheatham et al. (1989) averred that a corporations' level of sales determines the number of investments required for working capital. Bendavid et al. (2017) stated that with limited or no access to external financing such as bank loans. It is crucial for small publicly traded corporations to efficiently manage their working capital to generate sufficient cash from their sales to replenish their inventory. Juan García-Teruel and Martínez-Solano (2007) accentuated that heavily investing in inventory and trade credits yields lower profits, hurting a corporations' liquidity position. Sabki et al. (2019) argued that competent WCM investment and financing decisions usually positively impact a corporations' liquidity position. Small publicly traded corporations do not want to find themselves in the position of having "excess" liquidity due to longer-term financing for shorter-term requirements. Therefore, small publicly traded corporations must analyze their WCM investment and financing decisions.

Investing in Working Capital

The literature on WCM has two competing views about investing in working capital. Deloof (2003) argued that investing in higher working capital levels allows corporations to

increase their sales and receive massive discounts for early payments, which increases profitability. Alternatively, Kieschnick et al. (2013) argued that investing in working capital with high levels decreases profitability. Future sales, debt load, financial constraints, and bankruptcy risk increase the investment cost causes profitability to decline. Erdogan (2015) argued that small publicly traded corporations rely on internal cash flows or informal credit sources when there is limited access or a lack of external financing. In contrast, larger corporations can use bank loans to finance their working capital versus internal funds, unlike small publicly traded corporations. Walker and Petty (1978) explained that small publicly traded corporations must retain their working capital profits at the end of the day.

Tran et al. (2017) argued that small publicly traded corporations could achieve high profitability by investing optimal working capital levels in account receivables, account payables, and inventory. Rao and Gaglani (2014) argued that small publicly traded corporations could invest more in account receivables and inventory as their sales grow. The size of the stock investment, account receivables, cash, and marketable securities depends on three factors: the percentage of credit sales to total sales, the level of sales, and the credit and collection policies of the corporation (Petty et al., 2012). Waema and Nasieku (2016) argued that over-investing in inventory and receivables decreases a small publicly traded corporation's profit. In contrast, underinvesting increases the risk of not meeting the small publicly traded corporations' short-term obligations and operating expenses when due.

Pais and Gama (2015) believe most corporations have a large amount of cash invested in working capital. In the world of investment, cash is not an actual green dollar. Fevurly (2018) defined cash investments as a current short-term asset with the highest degree of liquidity with

little to no risk to the original amount of cash invested, also called the principal. Bamber and Parry (2018) defined cash investments as inflows and outflows of cash relating to a corporations' purchase and sale of non-current assets. Rădășanu (2015) argued that most corporations have a significant amount of cash invested in current assets.

Nobanee and Abraham (2015) argued that corporations attempt to improve their liquidity by reducing their current assets investments, which leads to low risk and low financing costs. Low-risk investments can provide an excellent means for storing cash and can be easily liquidated to reduce a corporations' likelihood of financial loss (Newstex Finance & Accounting Blogs, 2015). Veronika et al. (2014) expressed small publicly traded corporations with a significant amount of cash, and marketable securities are more liquid than when it has a substantial amount of inventory. Tran et al. (2017) insist that maintaining an extensive list can increase sales, leading to improved profits and reducing the risk of interruptions in operations and costly stock out.

Another way small publicly traded corporations can generate profits is by deciding to invest in market securities. Attom (2016) claimed that corporations' can improve their liquidity by investing excess cash into short-term marketable securities. Before investing in cash and market securities, small publicly traded corporations must prioritize working capital and profitability. Martínez-Sola et al. (2014) argued that more liquid corporations could grant trade credits to corporations with low liquidity as an alternative to investing in marketable securities to reinforce the supplier-customer relationship. Small publicly traded corporations could generate cash and potentially increase a small publicly traded corporation's profitability by investing a portion of its free cash flow in high-yield securities such as stocks (John, n.d.). Lins et al. (2010)

warned non-operational cash hedges against the possibility that capital market frictions will obstruct small publicly traded corporations from financing their current operations in potential bad times.

Sources for Financing Working Capital

Fletcher et al. (2018) stated that for small publicly traded corporations to efficiently manage their working capital and profitability, they must distinguish between temporary and permanent corporations' financing strategies. Fields (2016) explained that short-term financing has a maturity period of less than or equal to one year. In contrast, permanent financing has a maturity period greater than one year. Hossain and Akon (1997) stated that short-term working capital sources, known as current liabilities, are financed with temporary operational capital needs. Vatter (1964) stated that current asset financing consists of current sources or revenues. Small publicly traded corporations heavily rely on short-term capital flows because of the difficulty of tapping into long-term sources. Choi (2017) argued that small publicly traded corporations rely on debt, cash flow, the capital they can generate internally, short-term bank loans, and trade credits to finance the required working capital for their daily operations. Laghari and Chengang (2019) and Wasiuzzaman (2015) stated that small publicly traded corporations use substitute financing sources for their investments, such as WCM that allows small publicly traded corporations to release short-term liquidity converted to its short-term nature. Attom (2016) argued that cash is imperative to financing working capital requirements throughout its small publicly traded corporations cycle. Herdinata (2017) added that the amount of financing needed to cover the maturing debt depends on its growth.

Spontaneous financing is another financing strategy that is generally unplanned and unstructured, meaning it can be either temporary or permanent (Kwenda & Holden, 2014). Aminu and Zainudin (2015) stated that small publicly traded corporations generally use spontaneous financing when purchasing from suppliers on credit called trade credits. Trade credit is a source of short-term financing that has numerous advantages. Yazdanfar and Öhman (2017) argued that trade credit could substitute and complement other financing sources. Rangarajan and Misra (2005) discussed that there are generally no formal agreements involved in extending credit. Therefore, effective and efficient financing tools have to target significant projects and support at least inhibit the strategic development of corporations' capacities and capabilities (Margarian, 2017).

García-Teruel and Martínez-Solano (2010) and Otto (2018) argued that trade credit is considered an investment for sellers of goods and services in current assets, called debtors. In contrast, it is a form of funding under current liabilities called creditors for buyers of goods and services. Nwude (2017) argued that good credit policies manage debtors. Many corporations must deliver goods and services that make the customer happy and willing to buy to generate sufficient liquidity to pay their suppliers and capital providers (Kaiser & Young, 2014). Mubashar et al. (2019) argued that trade credit could also be used as a sales promotion technique to increase future sales keeping in mind the commercial benefits and transaction motives. Furthermore, the amount of credit extended is flexible to meet the small publicly traded corporations' needs; this is considered a spontaneous financing source.

Working Capital Management Policies

Sixth, small publicly traded corporations must implement the appropriate working capital policy to manage their working capital and profitability effectively. For the most part, Attom (2016) stated that working capital policy affects small publicly traded corporations' direction regarding current assets investment and short-term financing. The importance of WCM could not be understated considering the amount of time small publicly traded corporations spend on making decisions about financing their current assets (Aminu & Zainudin, 2015). For example, they make decisions about administering account receivables, controlling the inflow and outflow of cash, and negotiating credit terms.

Rehman et al. (2015) pointed out that WCM is majorly driven in research studies by three WCM strategies: aggressive, conservative, and moderate. These strategies focus on the level of liquidity and profitability a small publicly traded corporation seeks to achieve, referred to as working capital policy. Shah et al. (2016) found that small publicly traded corporations apply aggressive policy strategies, whereas large corporations apply conservative policy strategies. Filbeck et al. (2017) argued that most small publicly traded corporations use an aggressive approach when sales growth or sales volatility increases. An aggressive strategy could decrease the most liquid asset, such as cash; it also seeks to decrease inventory while keeping account receivables relatively high (Zimon, 2020). Tahir and Ahmad Anuar (2016) argued that using an aggressive policy creates short-term liquidity problems. They explained that an aggressive policy utilizes higher levels of low short-term debt and less long-term capital, which increases profitability by financing fixed assets with long-term debt, in contrast to funding permanent

current assets with current liabilities. However, Pais and Gama (2015) pointed out that an aggressive policy approach can increase corporations' profitability.

Contrary to Akram et al. (2016), corporations finance permanent assets and current assets under the conservative policy to avoid investing in current assets rather than trade securities to conserve liquidity. Tahir and Ahmad Anuar (2016) added that a conservative approach lowers the risk of short-term liquidity problems by decreasing the account receivables and inventories and stretches the account payables. Zimon (2020) argued that implementing this strategy maintains a high level of cash and inventory. Pais and Gama (2015) pointed out that using a conservative policy can generate higher profit by making little investment in current assets and keeping high non-current assets. For example, low cash balances, low inventory levels, and limited trade use credits to customers. Mohamad et al. (2017) argued that this strategy maintains a large amount of capital in current assets rather than fixed assets and increases working capital investment. Panda and Nanda (2018) Small publicly traded corporations could reduce the risk of short-term cash shortage by holding more assets and potentially affecting profitability in the long term, applying a conservative strategy. However, Nobanee and Abraham (2015) and Pais and Gama (2015) stated that corporations must be careful using a conservative strategy. Minimizing current assets can be tricky, leading to shortages, illiquidity, and difficulties managing daily operations and reducing a small publicly traded corporation's profitability.

Likewise, a moderate approach is a median between aggressive and conservative approaches and a short-term finance source used for fluctuating current assets (Ukaegbu, 2014). Bolek (2013) stated that low current assets and current liabilities could characterize a moderate policy as a percentage of total assets and total liabilities. Baker et al. (2017) asserted that a

moderate approach matches financial maturity with asset maturity. Working capital needs to maintain an adequate trade-off between a small publicly traded corporation's liquidity and profitability. Nwankwo and Osho (2010) argued that this strategy could minimize the small publicly traded corporations' risk of not paying off their obligations. Nwude (2017) contended that if a small publicly traded corporation plans to invest in working capital, they need to determine how to finance their investments. For any small publicly traded corporation to ensure effective WCM practices, the corporations' working capital policy must streamline the various working capital components (Attom, 2016).

Receiving and Extending Credit

Seventh, credit is a key to efficiently managing working capital. It can create a significant issue in all corporations, especially for small publicly traded corporations. Nicolae (2018) explained that it is challenging for most small publicly traded corporations to obtain financial credit from financial institutions such as banks. 30% of small publicly traded corporations need a credit line or permanent working capital to support their operations (Small Business, 2019). Kipkoech (2015) expressed that it is difficult for corporations to run their operations smoothly without proper credit management practices. Credit management has two categories: (1) the decisions to extend credit or not. If credit is an option, then how much to extend, and (2) decisions for existing accounts, including the minimum amount payment to receive a profit, when the collection period should start for delinquent accounts, and actions taken (Rosenberg & Gleit, 1994).

Spuchl'akova et al. (2015) argued that small publicly traded corporations must consider credit risk when managing working capital because it is associated with every active trade. Small

publicly traded corporations' must also ensure that offering credit creates more revenue from the sales to outweigh the cost of credit to avoid losses (Edwin & Omagwa, 2018). Regis (2018) expressed that access to credit is crucial for small publicly traded corporations' ability to invest and have access to get a loan. Zaher and Illescas (2020) found that small publicly traded corporations in countries with better access to credit can increase their profitability by improving their WCM. Likewise, Zaher and Illescas (2020) also found that small publicly traded corporations are more likely to benefit from efficient WCM than larger corporations.

Supplier Credit

Small publicly traded corporations usually purchase their inventory using trade credits from their suppliers (Aggarawal & Tyagi, 2016). Evans and Koch (2007) explained that small publicly traded corporations' future sales depend on the suppliers' willingness to provide credit during difficult financial times. Ries et al. (2017) argued that utilizing trade credits allow corporations to delay their payments to suppliers for a predetermined credit term for free or by a contracted interest rate. Muhammad et al. (2016) and Nobanee and Abraham (2015) added that corporations could be more profitable if they wait longer to pay their suppliers. Aggarwal and Tyagi (2014) argued that the benefit of suppliers offering inventory on credit allows corporations to sell more stock compared to relying on cash sales.

Sial and Chaudhry (2012) argued that if small publicly traded corporations wait longer to pay their suppliers, they risk having quality issues with their inventory. Which can ultimately affect the profitability; on the other hand, minimizing inventory can lead to loss of sales if the stock runs out. Tran et al. (2017) added that small publicly traded corporations' sales increase if they have many inventories. In turn, this can improve their profit, avoid interruptions in their

operations and costly stock-outs. Simultaneously, large amounts of stock and offer trade credit can reduce the available cash as working capital.

Andrieu et al. (2018) stated that small publicly traded corporations depend on trade credits more than bank credits because banks are more likely to lend to corporations with more assets. Whereas, according to Martínez-Sola et al. (2014), suppliers are more likely to lend to constrained corporations in financial trouble rather than financial institutes such as banks. Trade credits used as a source of short-term external financing may be helpful to reduce transaction costs or attest to the quality of the supplier's products (Petersen & Rajan, 1997). Acharya et al. (2014) argued that generally following a negative profitability shock, access to credit is limited to small publicly traded corporations when they need it the most.

Aggarawal and Tyagi (2016) argued that small publicly traded corporations could benefit from offering trade credits because it increases sales and profit. Bryk et al. (n.d.) stated that small publicly traded corporations increase their profits by the following: strengthening their negotiation power, developing partnerships with the right supplier to share the risk, extend payment terms and warranty periods, or even hold inventory based upon an agreed trade credit. For example, corporations with a higher degree of distress risk, financial constraints, and limited access to other resources could leverage trade credits to increase their profits (Abdulla et al., 2017). The decision to offer trade credits has a disintegrating effect on cash transactions. It stimulates recent credit sales. Aggarawal and Tyagi (2016) stated that no matter how good a corporations' credit or collection policy is, a fraction of their accounts receivable may remain uncollectible and become a severe debt loss.

Customer Credit

Any small publicly traded corporation nature may demand that credit be offered instead of cash (Kipkoech, 2015). The essence of small publicly traded corporations extending credit is to improve sales by allowing customers to make purchases on credit (Attom, 2016). Conversely, this does not necessarily improve its liquidity since such an increase in sales becomes tied up in debtors. Tran et al. (2017) explained that offering trade credit to customers can stimulate sales because it allows customers to validate their quality before purchasing making payments. It can be an inexpensive credit option for customers. Aggarawal and Tyagi (2016) stated that small publicly traded corporations give customers credit to meet competition and generate credit sales to exceed cash sales. Shrivastava et al. (2017) argued that strict credit collection policies and limited credit sales to customers could reduce the account receivables period and improve cash inflow. Having strict collection policies is a win-lose situation because it can also reduce sales translating to reduced profits. Aminu and Zainudin (2015) explained that corporations that are not diligent in managing their credit operations could suffer significant losses from bad debts. Especially during a recession, when suppliers may delay products, limit credit, or customers may have difficulty paying their bills. Campello and Gao (2017) added that extending credit to many customers can expose the small publicly traded corporations to costs and risks that may affect their access to credit.

Credit or Cash-Purchase of Inventory

Future inventory is converted into service provision or product sales to generate cash (Yildiz & Khan, 2018). Managing WCM and profitability revolves around the purchasing of inventory. Grablowsky (1984) explained that corporations must make significant inventory

investments; properly managing this asset can significantly influence a small publicly traded corporation's profitability. Song (2019) argued that most corporations take advantage of inventory financing for the following reasons: to cover short-term cash flow gaps, to prepare for busy seasons, launch a new product or service, or to increase their sales. Small publicly traded corporations widely use credit cards and credit lines to increase their access to extra working capital to meet their daily expenses. As a result, corporations can delay payments, which imposes a financing cost called interest.

Devalkar and Krishnan (2019) argued that instead of paying interest to a bank, obtaining trade credit directly from the supplier is less expensive and has more benefits. Yang and Birge (2018) added that accepting trade credits permits risk sharing, more early payment discounts, better financing terms, reduces marginal cost, and increased sales for the small publicly traded corporations and suppliers. Small publicly traded corporations that accept trade credits can increase their profitability with higher inventory levels. Aggarawal and Tyagi (2016) argued that the decision to offer trade credits might have a disintegrating effect on cash sales on top of stimulating recent credit sales. A fraction of a small publicly traded corporations' accounts receivable may remain uncollectible and become an unwanted debt loss regardless of their credit or collection policy.

Receipt of Payment

In practice, corporations use trade credits to delay payments to avoid paying the same policy payment all the time due to the uncertainty of cash on hand (Kumari & Pakkala, 2016). Instead, small publicly traded corporations use trade credits to settle their account at the end of their credit term or authorize a payment later, usually at the expense of interest charged by the

supplier for an outstanding balance. Under a trade credit policy, corporations do not have the option to decide when to settle their account; they have to pay at the point of sales or a predetermined point (Kumari & Pakkala, 2016). Wilson (1999) argued that suppliers who offer goods and services on trade credit give corporations a net 30 - day payment period. This payment period can vary tremendously across industries (minimum seven days to a maximum of 120 days).

B. Wang (2019) stated that small publicly traded corporations could determine when to make a payment by monitoring their WCM components. Jeffery et al. (2018) reported that payments are an essential function in operations and profoundly impact WCM. Suppose a small publicly traded corporations' working capital reaches zero. In that case, the corporation is at risk of not paying creditors in times of an emergency, becoming bankrupt, taking high-interest loans, and causing corporations to miss out on profitable investment opportunities (Qamar, 2014). Jeffery et al. (2018) noted that small publicly traded corporations use several payment strategies to optimize their working capital. For example, 58% leverage the least costly payment method, 41% earn rebates, 40% receive discounts on payables, 38% require longer payment terms from vendors, and 28% delay their payments. Hofmann and Kotzab (2010) added payment strategies with extended terms that benefit buyers create a higher risk for suppliers.

Working Capital Management Over Time

Nadeem et al. (2020) stated that the different views of the importance of the WCM had persuaded many researchers to continue examining the topic. Approximately 48% of the respondents believe that small publicly traded corporations' climate in North America will somewhat worsen over the next few years (Small Business, 2019). Sen and Pradhan (2016)

argued that proper working capital projections are essential; the amount of working capital varies across corporations over time depending on the type of corporation, size, production cycle, credit policy, and inventory availability. Kaur and Kalotra (2019) confirmed that working capital requirements depend on the size and nature.

Kandpal (2015) advised that understanding the association, direction, and change of working capital provides a base to determine whether the investment practice and working capital policy is good enough or if the process for managing working capital funds needs to be improved. Shrivastava et al. (2017) stated that working capital requirements place a more significant burden on WCM decisions. Decisions on managing, financing and credit practices greatly influence a corporations' profitability. WCM has severe consequences for small publicly traded corporations' available liquidity and profitability. Motlíček and Polák (2015) added that working capital requirements could significantly affect a small publicly traded corporation's costs and revenues. Therefore, small publicly traded corporations need to understand all aspects of WCM.

Darun et al. (2015) stated that during the globalization era, two themes surfaced, understanding WCM and the effectiveness of WCM. After reviewing the literature, the growing theme centered on WCM decision making, WCM investment and financing decisions, and credit management practices. According to Bragg (2020), over some time, several factors can cause changes in working capital:

- *Credit policy.* When a small publicly traded corporation has strict credit policies, it reduces the number of account receivables outstanding and improves cash. However,

there may be an offsetting decline in net sales. It is a reverse effect with a less restrictive credit policy.

- *Collection policy.* Implementing an aggressive collection policy can result in more rapid collections, which reduces the total amount of account receivables, which is cash. It is a reverse effect with a less aggressive policy.
- *Inventory planning.* Increasing inventory levels to improve order fulfillment rates lead to higher inventory investments, increasing cash use. It is a reverse effect if the inventory levels decrease.
- *Purchasing practices.* Corporations make decisions to purchase a large amount of inventory to reduce pricing costs. Having a significant inventory increase increases inventory investment, which requires cash. It is a reverse effect if a small amount of inventory is purchased.
- *Accounts payable payment period.* Small publicly traded corporations negotiate more extended payment periods with their suppliers to increase their cash. However, more extended payment periods increase account payables. It is a reverse effect if the payment periods shorten.
- *Growth rate.* Rapid growth rates demand massive working capital changes from month to month. The small publicly traded corporations must invest in a more generous amount of account receivables and inventory, which uses a more considerable degree of cash.

Suppose a small publicly traded corporation's growth rate declines. In that case, it can reduce the need to invest heavily in account receivables and inventory.

- *Hedging strategy.* A hedging strategy that generates an offset cash flow is less likely to be unexpected working capital changes. However, there will be a transactional cost for each hedging transaction.

Evolving Nature of Working Capital

The notion of efficiently managing WCM and profitability has undergone many transformations from Sagan (1955) to Prempeh and Peprah-Amankona (2020). Darun et al. (2015) stated that through WCM transformations, small publicly traded corporation owners act as problem solvers, and academicians work to find a solution(s). It is also proper to acknowledge that academicians provide new insight into WCM. Small publicly traded corporation owners and managers implement ways to prove their usefulness. Nastiti et al. (2019), in recent years, scholars have demonstrated a great interest in investigating the strategic role of WCM in corporations. Oladimeji and Aladejebi (2020) found that academically WCM has been an ongoing topic of interest because of its impact on a corporations' profitability. Bhatia and Srivastava (2016) argued that WCM has always been a topic of interest for corporate corporations, including globally.

Maenuddin et al. (2020) expressed that WCM has evolved. Small publicly traded corporations must pay attention to every component of WCM to increase their corporations' profitability. Changes in competition, customer demand, customer needs, inflation rates, technology dramatically affect a corporations' bottom line, and other external factors that may change rapidly and unexpectedly influence researchers to continue studying WCM (Al Ani & Al Kathiri, 2019). As per Boisjoly et al. (2020), practitioners in finance and small publicly traded

corporations' services have a more incredible opportunity to improve the area of managing working capital.

Relevant Authors Used in the Study

Many works of literature found WCM and profitability for large, medium, and small publicly traded corporations across multiple industries. The results of the effects of WCM on a corporations' profitability are mixed. Ben-Caleb et al. (2013), Husaria (2015), Rubin et al. (2016), Tamragundi and Vaidya (2016), and Ware (2015) confirmed a weak to no relationship exists between working capital management and profitability. Unlike Dencic-Mihajlov (2014), Mushtaq et al. (2015), Kung'u (2017) argued that a positive relationship does exist between WCM and profitability. Albandag and Elbendak (2018), Cristian and Raisa (2017), Tahir and Ahmad Anuar (2016), Michello and Wanorie (2015), and Bolek (2013) added to the argument by contending empirical evidence show that WCM has a direct effect on a small publicly traded corporations profitability, financial performance, liquidity, and risk.

For non-financial corporations, Lyngstadaas and Berg (2016) examined the relationship between working capital management and the profitability of 21,075 Norwegian SMEs. They applied a panel regression and concluded that it would increase profitability if SMEs reduce their WCM. The relevance of quadratic dependencies of the profitability on independent variables (e.g., inventories, account receivables, account payables, and cash) revealed that when WCM values increases return assets decreases. Shrivastava et al. (2017) performed a similar study on 1,172 non-government and non-financial corporations in Indian. They revealed that a longer WCM cycle is detrimental to a small publicly traded corporations' profitability. These studies highlight the importance of corporations aiming for a shorter WCM cycle to increase

profitability because financial soundness indicators play a significant role in determining a small publicly traded corporations' profitability.

Singhania et al. (2014) investigated the relationship between working capital management and profitability on manufacturing corporations in Indian listed on the Bombay Stock Exchange in the manufacturing industry. They applied a correlation analysis, regression analysis, and fixed effects estimation. Their results revealed that WCM has a negative relationship with small publicly traded corporations' profitability. Their study also suggests that working capital management can improve profitability if adequate levels are maintained. Tran et al. (2017) performed a similar survey of small and medium-sized manufacturing enterprises in Vietnamese. The results were slightly different. Their study reveals that reducing the number of days of accounts receivables, accounts payables, and accounts inventory to an optimal level can increase a small publicly traded corporation's profitability.

Catalysts of Change and Their Significance

Recently, Maeenuddin et al. (2020) stated that corporations rely significantly on WCM, which constitutes a vital tool. Oladimeji and Aladejebi (2020) stated that overall, internal and external factors are catalysts for working capital changes. In this study, the focus area is on internal factors that small publicly traded corporations can control. Through the review of literature, the most common catalysts of change in working capital were working capital investment and financing decisions, working capital, and credit policies (see Table 1).

Table 1*WCM Catalysts of Change*

Authors	Theory	Catalysts	Significance
Michello and Wanorie (2015)	WCM theory	Working capital investment and financing decisions	Small publicly traded corporations can profit by correctly managing working capital and each working capital component (accounts receivable, accounts payable, inventory, and cash).
Bendavid et al. (2017)	Trade-off theory	Working capital policies	Small publicly traded corporations with a well-defined hedging strategy can deploy a working capital policy. The policy can aid in obtaining the most favorable trade-off between profitability and liquidity to ensure they met their short-term obligations.
Rahman et al. (2015)	Hedging theory	Credit management practices	Small publicly traded corporations' profitability has a connection to acceptable credit management practices. Lengthy credit collection practices can create working capital problems. Having a proper plan for credit management can control cash from being tied up in working capital.

Steven Bragg (2020) contended that the goal of managing WCM is to reduce any upward changes that will acquire the need for additional funding. Bragg also calls out that small publicly traded corporations need to understand how to manage working capital efficiently. However, it is also equally important to understand how working capital changes from a cash flow forecasting perspective to minimize unexpected cash demand.

Prempeh and Peprah-Amankona (2020) study revealed that studies overlooked an optimal level of WCM that maximizes profitability and creates a balance between benefits and cost, which, in return, maximizes profits. They also believe there may not be a linear relationship between WCM and profitability. Zaher and Illescas (2020) argued that prior research documenting the relationship between WCM and profitability Boisjoly et al. (2020), Johnson and

Soenen (2003), and Wang (2019) had found mixed results. Academically, Boisjoly et al. (2020) recommend that further research focuses on whether specific financial measures capture more of the impact changes in WCM policies have on profitability due to their nature.

Today, the COVID-19 pandemic has globally created many challenges for corporations of all sizes, especially small publicly traded corporations. Dean (2020) stated that pre-COVID-19 created many challenges for small publicly traded corporations. Small publicly traded corporations must have a clear strategy to reduce barriers to create, build, and grow their corporation. According to Zimon (2020), small publicly traded corporations have been closing at an alarming rate or losing contracts, impacting sales. For this reason, there is a need for small publicly traded corporations to understand better how to manage working capital and profitability efficiently. Urrico (2020) believes researchers and financial institutions should help small publicly traded corporations through these troubled times to ensure they can recover from the COVID-19 pandemic. This study aims to explore the effectiveness of small publicly traded corporations, WCM practices, and strategies.

Summary Analysis

As discussed, inadequate WCM has been the downfall of small publicly traded corporations globally. There is ample literature on WCM and profitability, but there is minimal research on effectively managing WCM and profitability. Sen and Pradhan (2016) stated that if liquidity is a prerequisite to meeting short-term obligations simultaneously, it can lead to small publicly traded corporations' failure. This study examined the relationship between WCM and small publicly traded corporations' profitability in North America listed on the NASDAQ Stock

Exchange. It also attempted to help small publicly traded corporations in North America leverage their understanding of WCM and improve their financial skills.

In a financial crisis, maintaining a sufficient amount of working capital can prevent small publicly traded corporations from failing, and in turn, can increase profitability (Şamiloğlu & Akgün, 2016). Yunos et al. (2015) argued that effectively managing WCM can result in higher profits without creating liquidity problems. Liquidity directly affects working capital, which in turn affects profitability. The question at hand is, how do small publicly traded corporations in North America manage their working capital and profitability to maintain adequate liquidity? To answer this question required an analysis of small publicly traded corporations in North America (1) WCM levels with the assistance of the current ratio to assess liquidity levels, and (2) an evaluation of the small publicly traded corporations' profitability measured by the operating profit to sales.

Small publicly traded corporations in North America need a measurement tool to assess their WCM and profitability effectively and liquidity position. Maeenuddin et al. (2020) stated that having the right tools is critical because it demonstrates small publicly traded corporations' credibility to make effective decisions. Small publicly traded corporations make credit decisions depend on the tools and methods used for the analysis. Using the correct tools and methods allows small publicly traded corporations in North America to understand their working capital changes to manage WCM and profitability.

CHAPTER 3. METHODOLOGY

The purpose of this quantitative correlational study is to examine the relationship between WCM and profitability and the relationship between liquidity and profitability for small publicly traded corporations in North America. Rahman et al. (2015) and Tran et al. (2017) argued that poor WCM had been the primary cause for small publicly traded corporations' failure. Abimbola and Kolawole (2017) and Oladimeji and Aladejebi (2020) stated that small publicly traded corporations' main challenge is effectively managing working capital to increase profits. This dissertation explores over time if WCM and liquidity impact profitability. This research study aimed to add to the body of knowledge on the relationship between WCM and profitability by applying similar research methodology used by Michello and Wanorie (2015), Rahman et al. (2015), and Tran et al. (2017) that examined WCM and profitability of small publicly traded corporations listed on Stock Exchanges.

Chapter three focuses on the methods and procedures of how this research study addresses the research questions through data use. The results of previous researchers specify that a quantitative approach is appropriate for this study. Prior research on WCM and profitability by Rahman et al. (2015) and Tran et al. (2017), in addition to, Maenuddin et al. (2020), Nadeem et al. (2020), Prempeh and Peparah-Amankona (2020), used samples from different size corporations listed on stock exchanges. Oladimeji and Aladejebi (2020) recommended that further research is needed relating to WCM and profitability due to the inconsistencies in research findings on WCM and profitability of small publicly traded corporations. This research study adds to the body of knowledge by examining the relationship

between WCM and profitability and the relationship between liquidity and profitability for small publicly traded corporations in North America.

It lays out the procedures of how the data will be collected and analyzed. The sample size considered all small publicly traded corporations regardless of the industry listed in North America on the NASDAQ Stock Exchange. Since this study uses secondary data, the instrumentation section is not applicable. The approach in which to collect the secondary is discussed later in this chapter. WCM and liquidity and a financial ratio were analyzed using a Pearson Correlation to test the hypotheses. Lastly, this section discusses the data analysis, validity and reliability, and ethical considerations.

Design and Methodology

A quantitative research methodology is a simplified finance research approach (Dewasiri et al., 2018). Based on the research on small publicly traded corporations, this study used a quantitative ex post facto technique to analyze the relationship between WCM and the profitability and liquidity of small publicly traded corporations in the North America NASDAQ Stock Exchange. Cooper and Schindler (2014) explained that a quantitative research method allows researchers to advance their understanding of the research questions by examining variables to explain the relationship between two or more variables. Apuke (2017) asserted that it also enables researchers to quantify and analyze variables to achieve results and solve an issue or phenomenon by gathering numerical data. Specifically, the numerical data was collected using a technique called secondary data analysis. Data from a secondary source provides the researcher with excellent leads and a supply of background information to make decisions. It can be a rich

source of hypotheses (Cooper & Schindler, 2014). Table 2 below provides a snapshot of the design and methodology used for this study.

Table 2

Research Design and Methodology Snapshot

Design	Methodology
Phenomenon	How can small publicly traded corporations better understand how to manage working capital and profitability efficiently?
Business problem	Small publicly traded corporations fail within 2-5 years due to poor WCM
Theories	Working Capital Management theory, Trade-off theory, and Hedge theory
Themes Methodology	WCM investment and financing decisions, WCM policies, and credit management Quantitative
Research Design	Ex Post Facto
Data Collection	Secondary Data
Sample Population Sample Size	Small publicly traded corporations in North America 420
Sources of Evidence	Financial Statements (e.g., balance sheet and income statement)

This ex post facto study's topical scope examines how small publicly traded corporations in North America manage their WCM and profitability, and liquidity. Michello and Wanorie (2015) examined WCM and profitability, including the liquidity of small healthcare corporations listed on the NASDAQ Stock Exchange. The ex post facto design allows the researcher to report what happened to the measured variables (Cooper & Schindler, 2014). This explanatory quantitative ex post facto research study helped formulate a relationship between the independent and dependent variables using a mathematical analysis method. Apuke (2017) stated that quantitative research allows researchers to quantify and analyze variables to achieve results and solve an issue or phenomenon by gathering numerical data. Specifically, the numerical data

gathered from small publicly traded corporations' financial statements use a technique called secondary data analysis. Data from a secondary source can provide the researcher with excellent leads and a supply of background information to make decisions; it can be a rich source for hypotheses (Cooper & Schindler, 2014).

Population and Sampling

The population and sample size comprised small publicly traded corporations in North America listed on the NASDAQ Stock Exchange. The population considered all industries, which consist of 789 small publicly traded corporations across North America. As previously discussed, this study reviewed listed small publicly traded corporations in North America that filed an annual 10-K report with the U.S. Securities and Exchange Commission.

A random sample of 789 small publicly traded corporations in North America is the target sampling frame. In previous research, Michello and Wanorie (2015) used a sample size of 53, Rahman et al. (2015) used a sample size of 30, and Tran et al. (2017) used a sample size of 200. Cooper and Schindler (2014) stated that a random sampling size is often small since a randomization technique is applied. Walach (2010) argued that a randomization technique uses many random samples of available data to determine whether the actual empirical test outcomes might have occurred by chance. A power analysis using G*Power 3.1.9.4 Statistical tool determined the total sample size required to get significant results.

Cohen's effect size for Pearson's r of .3 is a moderate effect determining an actual correlation in the population. It also takes cautionary measures of making a Type I or Type II error. Wagner and Gillespie (2019) postulated that researchers try to balance errors to determine whether their outcomes represent actual correlations. A priori power analysis helps to determine

the statistical power needed to identify correlations in the data and avoid conducting studies with too little or too many samples or participants. Achieving a power rating of .80 requires a minimum population size of 84.

A random sample of 420 small publicly traded corporations listed on the NASDAQ Stock Exchange was selected. The sample was sorted randomly in Excel using the RAND formula to assign random numbers to the data set. Next, the researcher entered the small publicly traded corporations' symbol into the EDGAR database to locate the small publicly traded corporations' 10-K annual reports. The researcher excluded small publicly traded corporations' with no or incomplete 10-K annual reports. Once the sample size is collected, the sampling procedure ends.

Setting

Small publicly traded corporations in North America that filed 10-K annual reports listed on the NASDAQ Stock Exchange are the targeted population. Specifically the small publicly traded corporations that have filed an annual report over the past five years. The researcher selected this population to further previous research conducted in the United States on small size healthcare corporations by Michello and Wanorie (2015). To better understand how small publicly traded corporations manage their working capital, the researcher used small publicly traded corporations across all sectors.

Data Collection

In compliance with the Institutional Review Board (IRB) Capella guidelines, the researcher did not collect data before IRB approval. Upon approval, the researcher pulled the financial statements for 84 small-publicly traded corporations for five years; each financial statement was treated as separate data, totaling 420 observations. Within each financial statement

(e.g., balance sheet and income statement), the researcher captured numerical data to calculate WCM, profitability, and liquidity. Financial reports are easily accessed free of charge. Drake et al. (2016) stated that public financial reports are suitable for gathering audited financial data.

Sathyamoorthi and Wally-Dima (2008) used financial statements to analyze how corporations financed their current assets, discovered the importance of WCM components, identified trends over four years, and drew conclusions about WCM effectiveness. Using secondary data from the EDGAR database eliminates the threat to the validity of the data. Therefore the instrument does not apply to this study. The researcher conducted a web search of the NASDAQ Stock Exchange and Edgar Database to gather the secondary data. The data were analyzed using statistical techniques to examine WCM, profitability, and liquidity. Following Michello and Wanorie (2015), Rahman et al. (2015), and Tran et al. (2017), this study utilized the Pearson Correlation Coefficients to examine the WCM cycle, which is Receivables Collection Period (RCP) + Inventory Conversion Period (ICP) - Payables Deferral Period (PDP). Furthermore, profitability (operating profit to sales) and liquidity (current ratio).

The Pearson Correlation Coefficients establishes the magnitude and direction of the correlation between WCM and profitability, liquidity, and profitability. Performing a correlation analysis can help researchers understand the interactions and underlying relationships between these variables (Wang et al., 2018). Theories are generalizations researchers make about the variables and predict the phenomena. In contrast, reasonable hypotheses can explain and describe the variables' relationships (Cooper & Schindler, 2014). Theories and hypotheses were applied to link the underlying theories and research questions to assist with the data analysis and assess its validity and reliability.

Hypotheses

This dissertation examined the relationship between WCM, liquidity, and profitability in small publicly traded corporations in North America. The research design and methodology lay out a snapshot of how this study is aligned to address this dissertation's research questions. The collected data were analyzed to test the following hypotheses listed below.

RQ1: To what extent does working capital management (cash conversion cycle) relate to profitability (operating profit to sales) in small, publicly traded corporations in North America?

H_0 : A statistically significant relationship does not exist between working capital management (cash conversion cycle) and profitability (operating profit to sales)?

H_a : A statistically significant relationship does exist between working capital management (cash conversion cycle) and profitability (operating profit to sales)?

RQ2: To what extent does liquidity (current ratio) relate to profitability (operating profit to sales) in small, publicly traded corporations in North America?

H_0 : A statistically significant relationship does not exist between liquidity (current ratio) and profitability (operating profit to sales)?

H_a : A statistically significant relationship does exist between liquidity (current ratio) and profitability (operating profit to sales)?

Data Analysis

Bravais initially discovered Pearson's Correlation Coefficient or Pearson's r . However, Karl Pearson was the first to describe the standard method of two variables' calculations and measure of strength and linear correlation (Hauke & Kossowski, 2011). This study examined the relationship between WCM and profitability and the relationship between liquidity and

profitability of small publicly traded corporations in North America. The researcher was interested in knowing if a statistically significant relationship exists between WCM, liquidity, and profitability. Therefore, the researcher used Pearson's r because WCM, liquidity, and profitability generate ratio data. For example, one type of ratio data is money values representing the actual amounts of a variable. A parametric test, such as Pearson's r , can provide statistical evidence of a linear correlation using a scatterplot (Cooper & Schindler, 2014). The researcher visually evaluated the correlation: the direction, magnitude, and shape. Suppose the parametric statistics requirements in the sample obtained are not met (normality, linearity, and homoscedasticity). In that case, Kendall's tau will substitute for Pearson's r as the data analysis technique (Belhekar, 2016; Kremelberg, 2014).

This study utilized an IBM SPSS v27 to perform a descriptive statistical and quantitative analysis of the data. A descriptive statistical analysis is the first step to exploring the data in an excel spreadsheet (Cooper & Schindler, 2014). A descriptive statistical analysis allows the researcher to evaluate the mean, standard deviation, minimum, and maximum value of each variable used in this quantitative ex post facto study to examine the relationship between WCM, profitability, and the liquidity of small publicly traded corporations in North America in the sample. The researcher used descriptive measures as a primary tool to describe the center, spread, and shape of the distributions. Cooper and Schindler (2014) explained that a mathematical equation manages any variable distribution value with a normal distribution. For example, it assumes that WCM and liquidity have a normal distribution because mathematical equations govern them. By reviewing prior research studies, the researcher identified that using Pearson's r and descriptive statistical analysis are suitable tools aligned to support this study in

examining the relationship between WCM, profitability, and small publicly traded corporations' liquidity in North America.

Suppose the researcher cannot meet the parametric statistics requirements on the sample obtained (normality, linearity, and homoscedasticity). An alternative data analysis technique for Pearson's r when a violation of assumptions occurs is Kendall's tau-b. In this case, chi-squared is the data analysis technique of choice (Belhekar, 2016; Kremelberg, 2014). The researcher expects there will be missing or incomplete data based on previous literature. Cooper and Schindler (2014) stated that researchers could use a two-step process strategy for handling missing data. They stated the researcher would explore the data for patterns to determine the reason(s) for missing data and (b) then select the best missing-data technique to address the missing data without introducing bias. Baer (2019) stated there are six-way bias can be introduced to the data (a) the process used to collect the data, (b) the source of the data, (c) through the development of the model, (d) through subjective data, quantitative data, (e) traumatized data, and (f) inappropriate data processing. Understanding what caused the data to be missing allows the researcher to select the appropriate missing-data technique to avoid introducing bias in subsequent analysis (Cooper & Schindler, 2014). The researcher is responsible for ensuring the raw data is free of errors and accurate. If not, the researcher must omit the finding that may compromise the quality of the data.

A secondary source is an excellent resource for background information and many promising leads (Cooper & Schindler, 2014). To achieve the desired outcome of demonstrating the magnitude and direction of the relationship between the independent variables WCM and liquidity and the dependent variable profitability, the sequence of methods is as follows:

1. To perform the data analysis, select the appropriate measurement scale. The measurement scale used in this study is a ratio scale.
2. The researcher entered the mathematical calculations for the independent variables (WCM and liquidity) and dependent variable (profitability) from the downloaded financial statements into a Microsoft Excel spreadsheet.
3. The researcher uploaded the completed Microsoft Excel spreadsheet into the IBM SPSS Statistical database for analysis.
4. To test a hypothesis, select an appropriate statistical test. Note: this is a correlational study.
5. Once the researcher selects the appropriate statistical test, the researcher selected the desired level of significance. Note: the standard level of significance is .05, although .01 is also commonly used (Cooper & Schindler, 2014).
6. Allow the IBM SPSS to perform the statistical calculations.
7. Once the statistical calculation results are available, analyze the visual graph to identify the distribution's critical value distributions. The critical value is an indicator that defines the region of rejection (reject the null) from the region of acceptance (accept the null) (Cooper & Schindler, 2014).
8. Interpret the test results. Note: If the calculated value is greater than the critical value, reject the null hypothesis, and accept the alternative hypothesis. Oppositely, if the critical value is greater than the calculated value, then fail to reject the null hypothesis (Cooper & Schindler, 2014).

Statistical hypothesis testing gives two options to (a) reject the null hypothesis or (b) fail to reject the null hypothesis (Cooper & Schindler, 2014). There are two different perspectives relating to Fisher's null hypothesis testing and an alternative perspective from Jerzy Neyman and Egon Pearson (Belhekar, 2016). From Fisher's perspective, the only correct statement is to reject the null. On the other hand, the null hypothesis is either accepted or rejected (Belhekar, 2016). A researcher can analyze the test results based on either criterion (Kolgatin, 2016). The researcher analyzed the hypothesis testing results using the Neyman and Pearson criterion. Belhekar (2016) stated that researchers make assumptions to test the significance level using Pearson's correlation. When the assumptions for the significance level are not met or the data is ordinal or categorical, it is required for the researcher to use alternative methods. The researcher is responsible for reviewing the selected test's assumptions and performing a diagnostic test to determine the most appropriate technique (Cooper & Schindler, 2014). If the alternative methods are violated, but there is a monotonic correlation among variables, the non-parametric Kendall's tau-b would be the appropriate choice (Belhekar, 2016). If the Kendall tau-b is also violated, chi-square can work as the choice (Kremelberg, 2014). If a significant correlation between variables is obtained, the effect size can be interpreted using Cohen's criteria (Ellis, 2010).

Validity and Reliability

A correlational analysis validated the research results' truthfulness to test the research hypotheses' validity. Secondary data can help with confidence under various times and conditions (Cooper & Schindler, 2014). The design and methodology of this research study are valid and reliable because it follows the works of Michello and Wanorie (2015), Rehman et al. (2015), and Tran et al. (2017). Similar to Michello and Wanorie (2015), Rehman et al. (2015),

and Tran et al. (2017), the researcher performed a quantitative study and identified the population sample from a stock exchange. The researcher used the same variables as Michello and Wanorie (2015) to measure WCM (cash conversion cycle), liquidity (current ratio), and profitability (operating profit to sales). These prior researchers confirmed that secondary financial data is suitable to address the research questions.

Michello and Wanorie (2015) collected secondary financial data from the EDGAR database. The EDGAR database is a valuable and reliable public resource that requires public companies to disclose accurate, meaningful financial information such as annual reports. This database serves as a central clearinghouse for gathering and disseminating public companies' financial information and is valid for establishing benchmarks used to measure and improve performance (Lee et al., 2015). Using financial data from the U.S. securities and exchange commission (SEC) increases the data's validity and reliability. Financial statements from the SEC are reliable instruments that can be used with confidence and work well at different times and conditions.

Ethical Considerations

The researcher, the research committee, and the research sponsor must uphold personal integrity (Cooper & Schindler, 2014). All parties should exhibit ethical behavior that guides their moral choices about their behavior and relationship with others (Cooper & Schindler, 2014). The ultimate goal of achieving ethics in research is to ensure that no participants are harmed or suffers adverse consequences from the research processes and procedures (Cooper & Schindler, 2014). Ethical aspects can arise in creating the research questions, the design and methodology, consent methods, and the interpretation of the results (Knottnerus & Tugwell, 2018). Ethical

problems can be eliminated by carefully planning and vigilance or receiving help from the institutional review board or peer groups that examines the research proposal for ethical dilemmas (Cooper & Schindler, 2014).

Professional researchers can access several standards of ethics and policies that date back to the *Belmont Report* and the Federal Register (Cooper & Schindler, 2014). To mitigate the risk of an ethical dilemma, the researcher proposed performing a secondary analysis of small publicly traded corporations' financial statements in North America. Prior research by Rădășanu (2015), Nwude (2017), Prempeh and Peprah-Amankona (2020) used secondary data to access financial information for their sample population. In this study, the researcher conducted an internet search to access the EDGAR database to download financial statements of listed small publicly traded corporations in North America from the NASDAQ Stock Exchange for research purposes. Accessing financial statements from the EDGAR database is free of charge, making it suitable to provide evidence on small publicly traded corporations' WCM activities (Drake et al., 2016). The researcher's responsibility is to safe-keep any collected data about personal identifying information ([PII]; Cooper & Schindler, 2014). Due to the research questions' sensitive nature, the researcher assigned each small publicly traded corporation a random indicator to protect each participant's privacy and confidentiality. The researcher did not report any PII and encrypted the collected data during storage to ensure no one can access it. A data breach will cause the researcher to notify IRB immediately. Lastly, the researcher will permanently delete the encrypted data seven years after completing this research study.

CHAPTER 4. RESULTS

This quantitative correlational research study examined whether a relationship exists between WCM and profitability and whether a relationship exists between liquidity and profitability for small publicly traded corporations in North America. In this research, the dependent variable is profitability, which is the critical value. The independent variables are WCM and liquidity. The sources to conduct the descriptive and quantitative analysis included small publicly traded corporations' balance sheets and income or operation statements. The researcher organized and randomly sorted the sample population's raw data in a Microsoft Excel spreadsheet and analyzed it in IBM SPSS version 27 statistical software.

Small publicly traded corporations' profitability calculation was operating profit divided by net sales (Michello & Wanorie, 2015). The working capital calculation was the receivables collection period plus the inventory collection period minus the payables deferral period (Michello & Wanorie, 2015). Liquidity calculation was current assets divided by the current liabilities (Michello & Wanorie, 2015). The three theories discussed in the literature to examine the relationship between WCM, profitability, and liquidity are the WCM theory, the trade-off theory, and the hedge theory. Chapter 4 reports the data collection results, the descriptive and hypotheses analysis related to this study's research questions.

Data Collection Results

The data collection process was straightforward. The researcher identified the population on the NASDAQ Stock Exchange. The researcher downloaded the list of 789 small publicly traded corporations from the NASDAQ Stock Exchange into an MS Spreadsheet. The downloaded list provided the researcher with the ticker symbol, name, sector, and industry. The

researcher randomly sorted the list of small publicly traded corporations using an Excel formula. After randomly sorting the list, the researcher entered the small publicly traded corporation's ticker symbol into the EDGAR database. The researcher located five years of financial statements for 84 small publicly traded corporations. Each year of financial data was treated as separate data, totaling an observation of 420 financial statements.

During the data collection process, there were no unexpected occurrences encountered. However, several expected occurrences happened where a small publicly traded corporation did not have five years of financial statements. The researcher did not include small publicly traded corporations with missing financial statements in the data sample. This step reduced the risk of publishing inaccurate results (Huebner et al., 2016).

Descriptive Analysis

The researcher performed a descriptive analysis for WCM, liquidity, and profitability to better understand the data distribution. To perform a parametric test requires that the data has a normal distribution. The normal distribution is symmetric, so both sides' distribution is the same (McEvoy, 2018). The researcher ran two separate tests for normality: Descriptive Statistics, Shapiro-Wilk, and created histograms for a visual inspection to determine if each variable has a normal distribution.

The researcher performed individual descriptive tests for WCM, liquidity, and profitability, then combined the data into one table. The combined descriptive statistics for the study variables (see Table 3) display information about each variable's distribution. Table 3 assisted the researcher in providing a quantitative summary of the data. It does not make any generalizations beyond the data presented in the table.

Table 3*Combined Descriptive Statistics for Study Variables*

Variable	<i>N</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	<i>SE</i>	Statistic	<i>SE</i>
WCM	420	-410.310	2198.438	112.391	211.787	6.169	.119	50.712	.238
Liquidity	420	.235	18.075	2.991	2.300	2.429	.119	8.737	.238
Profitability	420	-45.347	1.135	-.552	4.014	-8.653	.119	81.209	.238

Note. *N* = 420 observations. *WCM* = Working Capital Management. *Profitability* = Operating Profit/Net Sales, expressed in a percentage.

The financial data for WCM, liquidity, and profitability values measurement scale is ratio; therefore, in Table 3, the researcher included skewness and kurtosis to analyze the shape of the distribution curve for normality. The shape of the curve, the skew, and kurtosis tell the researcher something about normality. If the skew's $|a|$ is greater than 1, the data is leaning more to one side, and if it is not then, it is in the realm of normality.

Normality

The Shapiro-Wilk test is a standard test for normality. It is a numerical method that provides the significance level for each variable to help the researcher understand if the distribution's significance is distinctive from zero. If the significance value is less than .05, it has violated the assumption of normality. On the other hand, if the significance value is more significant than .05, then the assumption for normality has not been broken (see Table 4).

Table 4*Combined Tests of Normality for the Study Variables*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
WCM	.251	420	.001	.477	420	.001
Liquidity	.168	420	.001	.782	420	.001
Profitability	.450	420	.001	.154	420	.001

a. Lilliefors Significance Correction

Shapiro-Wilk's test revealed that WCM, liquidity, and the profitability significance level were $p < .05$. These results violated the assumption for normality. Since the Shapiro-Wilk normality test failed, the researcher inspected a histogram for each variable to look for a bell shape curve that exhibited a normal distribution. As assessed by visual inspection of the histograms (see Figures 1, 2, and 3), the assumption of normality for WCM, liquidity, and profitability again shows a non-normal distribution.

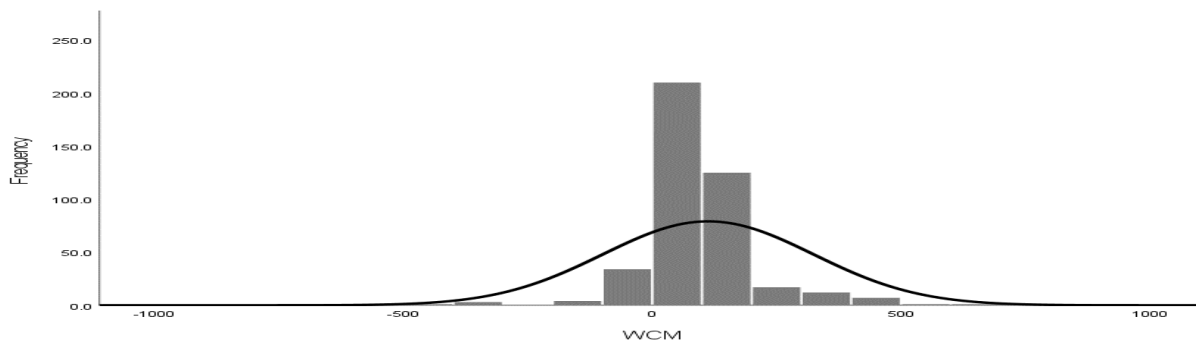
Figure 1*Simple Histogram of WCM*

Figure 2

Simple Histogram of Liquidity

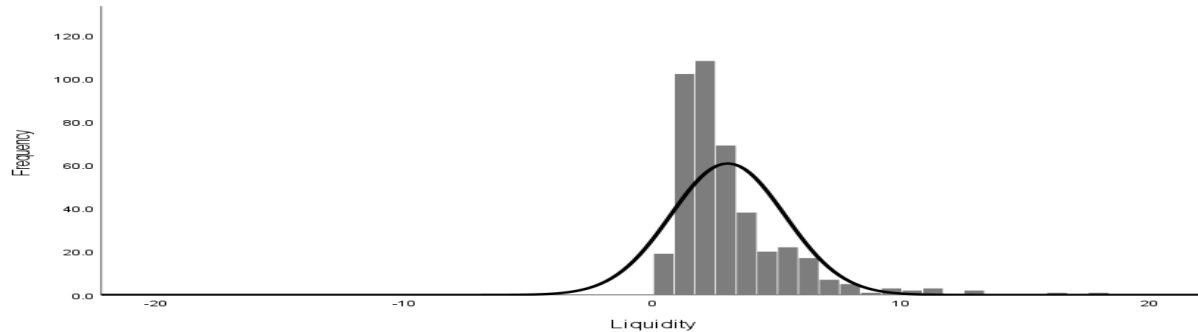
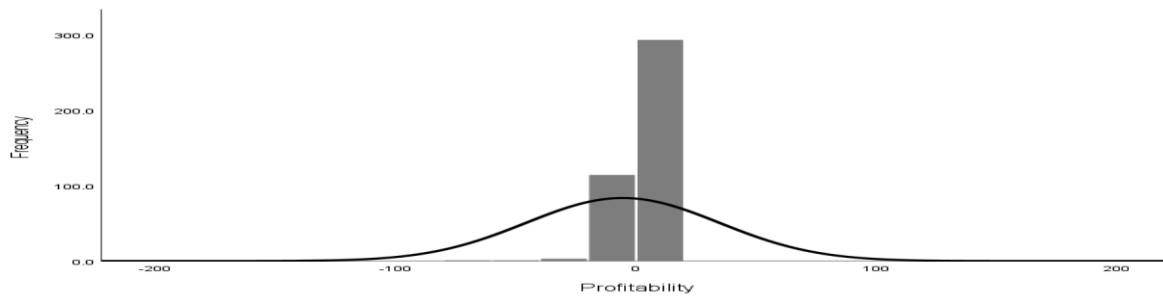


Figure 3

Simple Histogram of Profitability



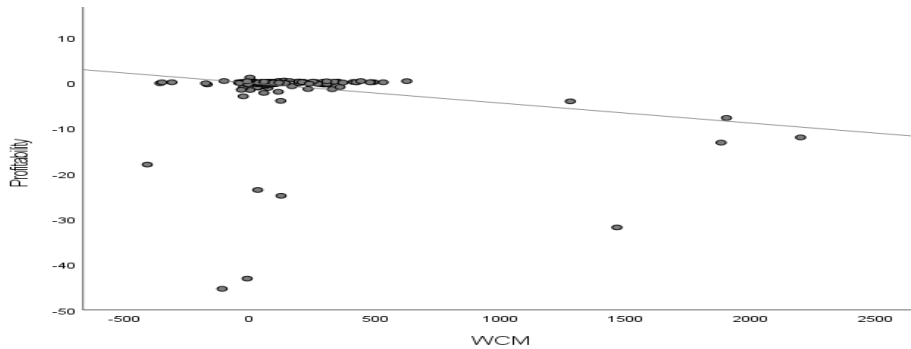
Note. Profitability = Operating Profit/Net Sales, expressed in a percentage.

Linearity and Homoscedasticity

Pearson's r requires a reasonably normal distribution, and there must be a linear relationship between the two variables. To establish if a linear relationship exists, the researcher visually inspected a scatterplot of WCM and profitability and liquidity and profitability (see Figures 4 and 5). These scatter plots revealed a violation of the requirements for linearity and homoscedasticity. Therefore, parametric statistics are not appropriate.

Figure 4

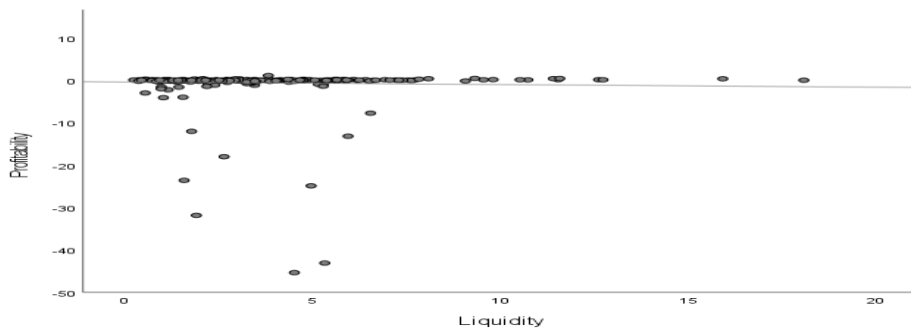
Scatter Plot of Profitability by WCM



Note. Profitability = Operating Profit/Net Sales, expressed in a percentage.

Figure 5

Scatter Plot of Profitability by Liquidity



Note. Profitability = Operating Profit/Net Sales, expressed in a percentage.

As assessed by Figures 5 and 6, profitability tends to cluster around zero, indicating that a significant relationship is never consistent between WCM and profitability and with liquidity and profitability. The variance of profitability is not homogeneous across the distribution of either WCM or liquidity, thus violating the provision for homoscedasticity. The requirements for linearity and homoscedasticity failed. The researcher chose to use a nonparametric statistic test

called Kendall's tau-b (τ_b). This non-parametric statistic test only requires variables to be measured on an ordinal scale. There is a monotonic relationship between the variables.

Analysis of Hypotheses

This research addressed the relationship between WCM and profitability and the extent of the relationship between liquidity and profitability for small publicly traded corporations in North America. The researcher analyzed small publicly traded corporation's financial statements in North America listed on the NASDAQ Stock Exchange for five years. The τ_b measured the strength and direction between WCM and profitability and between liquidity and profitability. It is a nonparametric alternative to Pearson's r when the assumptions required for parametric statistics are violated. The τ_b addressed the following research questions:

RQ1: To what extent does working capital management relate to profitability in small, publicly traded corporations in North America?

The τ_b assessed whether a relationship exists between WCM and profitability amongst small publicly traded corporations in North America. Table 5 shows, there is no statistically significant relationship between WCM and profitability. In this case, the measured association between WCM and profitability could be solely due to chance, so the researcher cannot reject the null hypothesis.

Table 5

Kendall's tau-b for WCM and Profitability

			Profitability
Kendall's tau_b	WCM	Correlation Coefficient	.010
		Sig. (2-tailed)	.758
		<i>N</i>	420

RQ2: To what extent does liquidity relate to profitability in small, publicly traded corporations in North America?

The τ_b assessed whether a relationship exists between liquidity and profitability amongst small publicly traded corporations in North America. Table 6 shows, there is a statistically significant relationship between liquidity and profitability. In this case, the researcher can reject the null hypothesis. There is a positive, statistically significant relationship between liquidity and profitability. This relationship would be considered a small *ES* by Cohen's standard interpretation of the correlation coefficient. Therefore, it is not large enough to be of practical value in guiding small publicly traded corporations' prediction or policy.

Table 6

Kendall's tau-b for Liquidity and Profitability

	Liquidity	Profitability
Kendall's tau_b	Correlation Coefficient	.109**
	Sig. (2-tailed)	.001
	N	420

Summary

This quantitative correlational research study examined whether a relationship exists between WCM and profitability and whether a relationship exists between liquidity and profitability of small publicly traded corporations in North America. The dependent variable for both hypotheses was profitability. The independent variables were WCM and liquidity. The researcher performed a preliminary analysis for normality, linearity, and homoscedasticity to determine whether Pearson's *r* was an appropriate statistical tool to test the hypotheses. WCM, profitability, and liquidity failed the preliminary tests. Therefore, the researcher used a nonparametric test called Kendall's tau-b to test the hypotheses.

The researcher used IBM SPSS v27 to analyze the data. The τ_b measured the strength and direction of the relationship between WCM and profitability and between liquidity and profitability. The results of the τ_b for WCM and profitability revealed that a significant relationship between WCM and profitability does not exist. So, the researcher did not reject the null hypothesis. The results of the τ_b for liquidity and profitability found a statistically significant relationship, so the researcher rejected the null hypothesis. Liquidity has a weak positive relationship with profitability, the magnitude of which would be considered a small *ES* by Cohen's standard interpretation of correlation coefficients. Therefore, it is not large enough to be of practical value in guiding small publicly traded corporations' prediction or policy.

CHAPTER 5. CONCLUSIONS

The number of opening establishments decreased from 1,003,000 to 1,000,000; while closing establishments increased from 888,000 to 898,000 (SBA Office of Advocacy, 2019; Wilmoth, 2019). Tran et al. (2017) stated that poor WCM is one of the primary reasons for corporation failures. According to an SBA Office of Advocacy (2012) report, small publicly traded corporations fail within 2–5 years. Michello and Wanorie (2015) proposed that small publicly traded corporations need to reevaluate how they manage their working capital.

Maeenuddin et al. (2020) stated that the tools small publicly traded corporations use to manage their working capital determine their credibility to make effective investing and financing decisions. They could also hedge the risk of liquidity cost using credit management practices.

Perera and Priyashantha (2018) stated that increasing profits at the cost of liquidity can cause small publicly traded corporations to have serious financial problems. The researcher executed Kendall's tau-b to understand which independent variable (WCM or liquidity) is most predictive of the dependent variable (profitability). Kendall's tau-b assisted in answering the research questions in this study. The research results revealed that WCM is not an essential factor to small publicly traded corporations' profitability. However, liquidity plays a minor role in small publicly traded corporations' profitability. Bendavid et al. (2017) stated that efficient WCM is the focal point of the trade-off between liquidity and profitability. Therefore, to mitigate the risk of high liquidity costs, small publicly traded corporations must consider the trade-off between liquidity and profitability if they want to maximize profits.

Chapter 5 focuses on the research questions and how they are aligned with the research purpose and contribute to the business problem. This chapter offers another perspective of the relationship between WCM and profitability and liquidity and profitability. Previous research suggests by Michello and Wanorie (2015) and Tran et al. (2017). This chapter will provide recommendations for further research and provide a conclusion for the research study.

Evaluation of Research Questions

There is an increasing interest in WCM (Prasad et al., 2019). The literature remains mixed on the effect of WCM on profitability. Ben-Caleb et al. (2013), Husaria (2015), Rubin et al. (2016), Tamragundi and Vaidya (2016), and Ware (2015) proposed that a weak to no relationship exist between WCM and profitability. In contrast, Dencic-Mihajlov (2014), Mushtaq et al. (2015), Kung'u (2017) suggest a positive relationship does exist between WCM and profitability. WCM is vital for ensuring small publicly traded corporations' continuous operations (Oladimeji & Aladejebi, 2020). However, the findings on WCM and small publicly traded corporations' profitability remain inconsistent (Abimbola & Kolawole, 2017).

This dissertation's research questions were directed at obtaining new knowledge about the impact of WCM and liquidity on small publicly traded corporations' profitability by investigating the relationship between WCM and profitability and its extent relationship between liquidity and profitability. Kendall's tau-b determined whether a relationship existed between WCM and profitability and liquidity and profitability. Previous scholars found that WCM has a weak to no statistically significant relationship with profitability. In contrast, other scholars found that WCM has a positive, statistically significant relationship with profitability.

The works of Michello and Wanorie (2015) and Tran et al. (2017) showed a negative, statistically significant relationship between WCM and profitability. Michello and Wanorie (2015) also showed a positive, statistical relationship between liquidity and profitability. This dissertation's results indicate that no relationship exists between WCM and the profitability of small publicly traded corporations. On the other hand, this dissertation's results indicate a positive, statistically significant relationship between liquidity and profitability. However, the effect's magnitude was small using Cohen's criteria for business and social science research.

The relationship between liquidity is probably not an important one on the impact of small publicly traded corporations' profitability listed on the NASDAQ. As a result, In this sample of small publicly traded corporations used as a representative of the NASDAQ Stock Exchange, the relationship between the independent variables (WCM and liquidity) and the dependent variable (profitability) is too weak to be practical utility in guiding management. For most of the companies examined, their profitability does not vary too far from zero. From a practical leadership standpoint, the relationship between liquidity and profitability is too tiny for small publicly traded corporations to spend time focusing on it. The liquidity and profitability relationship exists because, in the representative sample of small publicly traded corporations examined, the organizations may have been better at managing WCM. When organizations are good at managing WCM, liquidity will not be as predictive of profitability because it has been eliminated as a problem.

Fulfillment of Research Purpose

This research study aimed to examine the relationship between WCM and probability and the relationship between liquidity and profitability. Adam and Quansah (2019) stated that many

academicians and practitioners debate that efficient WCM leads to profitability. Many scholars examined WCM and profitability in specific industries. Previous research conducted by Tran et al. (2017) set the foundation for further studies on the relationship between WCM and profitability in other small industries. This study examined nine industries: basic industries, capital goods, consumer durables, consumer non-durables, consumer services, health care, miscellaneous, public utilities, technology.

The research findings suggest that the WCM indicator called the cash conversion cycle does not have a statistically significant relationship with profitability (operating profit to sales). In contrast, liquidity (current ratio) is related positively to profitability (operating profit to sales). This research is not suggesting that WCM is not essential. However, it suggests that the WCM indicator of the cash conversion cycle is not an excellent tool to manage working capital if maximizing profits. Similarly, the liquidity indicator current ratio is also not an excellent tool to manage working capital. These research findings contribute to the literature on WCM and profitability. This study can be helpful to finance scholars, finance managers, and small publicly traded corporations.

Contribution to Business Problem

One of the primary reasons small publicly traded corporations fail is poor WCM (Karadağ, 2018; Tran et al., 2017). Ali et al. (2017) stated that small publicly traded corporations continue to ignore WCM. Overlooking WCM can cause small publicly traded corporations to fail and face bankruptcy if they do not consider the trade-off between liquidity and profitability Mohanty and Mehrotra (2018). As a result, corporations either have insufficient or excessive

working capital from poor management. This dissertation's research findings contributed to the business problem using statistical techniques to examine WCM, profitability, and liquidity.

Smith (1973) explained that many small publicly traded corporations' failures attributed to their inability to manage working capital for decades efficiently. The way small publicly traded corporations manage working capital can significantly affect profitability. Afeef (2011), Michello and Wanorie (2015), and Rahman et al. (2015) suggested that small publicly traded corporations need to understand WCM investment and financing decisions and credit practices better. Small publicly traded corporations need to keep their finances in line and manage their working capital needs daily to achieve profitability (Daly, 2016).

In theory, small publicly traded corporations' short-term investment and financing decisions that do not consider the trade-off between liquidity and profitability can affect profitability. Tran et al. (2017) stated that small publicly traded corporations need to maintain optimal working capital levels to sustain and develop the corporation. Bellouma (2011) added that small publicly traded corporations could maintain an optimal working capital level through the liquidity and profitability tradeoff. Additionally, small publicly traded corporations can hedge the liquidity cost risk by having effective credit management practices (Nikolov et al., 2019).

The literature on WCM and profitability still have mixed results about the relationship between WCM and profitability. Anton and Afloarei Nucu (2020) stated that empirical evidence has mixed results because many factors and techniques can determine WCM and profitability. In some cases, the literature suggests a positive relationship between WCM and profitability (Oweis, 2020; Rahman et al., 2015). Others suggest a negative relationship between WCM and

profitability (Tran et al., 2017). Considering the results, WCM has no relationship with profitability for small publicly traded corporations in North America. However, there is a relationship between liquidity and profitability for small publicly traded corporations in North America. Although these results are not consistent with this research study's expectations and theoretical bases, it is consistent with Ben-Caleb et al. (2013), Husaria (2015), Rubin et al. (2016), Tamragundi and Vaidya (2016), and Ware (2015). They found an insignificant relationship and effect between WCM and profitability. Furthermore, consistent with Dencic-Mihajlov (2014), Mushtaq et al. (2015), Kung'u (2017), who found a significant relationship between liquidity and profitability.

The implication of the above is that WCM and profitability will continue to have mixed results. It is evident from the findings that small publicly traded corporations should not rely on the WCM and liquidity to manage their working capital to maximize profits. However, this study does suggest other underlying factors may influence small publicly traded corporations' profitability, which warrants further investigation.

Recommendations for Further Research

A significant and meaningful relationship between WCM and liquidity and profitability is not evident in a representative sample of small publicly traded corporations. The need for small publicly traded corporations to better manage working capital and profitability still exists. The small publicly traded corporations used in the sample appeared to have managed their working capital well enough. However, there is still an underlying issue impacting their profitability. This study used small publicly traded corporations from multiple industries and a large sample. In previous research, researchers studied one sector at a time and used smaller sample sizes.

When looking at specific or multiple industries, there may be variations where there may or may not be a relationship because of the different variables used for WCM, liquidity, and profitability. Therefore, this research recommends stopping efforts into future research around WCM and profitability because it wastes resources. Previous research explained that credit management practices and policies impact sales could lead to an impact on profitability. Otto (2018) emphasized that proper credit management practices ultimately increase sales, thus, increasing profits. Furthermore, credit management plays an essential role in how small publicly traded corporations finance their working capital (Tran et al., 2017). With that, future research efforts should investigate the impact credit management practices, or policies have on profitability.

Conclusions

This research study provides new empirical evidence on the relationship between WCM and profitability and liquidity and profitability. This research contributes to the body of knowledge by extending the area of WCM on small publicly traded corporations' profitability in North America. The literature suggested an association between WCM and profitability (Rahman et al., 2015; Tran et al., 2017). The research findings in this study demonstrate that there is no association between WCM and profitability. Similarly, this result supports Ben-Caleb et al. (2013), Husaria (2015), Rubin et al. (2016), Tamragundi and Vaidya (2016), and Ware (2015). They stated there is a weak to no association between WCM and profitability. These results suggest that small publicly traded corporations' profitability is not affected by the corporations' WCM, regardless of their investments in account receivables, inventory, and account payables.

Interestingly, liquidity is associated with profitability, but the association is weak. Previous research by Michello and Wanorie (2015) did not find evidence of an association between liquidity and profitability. These findings support Ben-Caleb et al. (2013) and Ismail (2016) that found an association between liquidity and profitability. The positive relationship between liquidity and profitability suggests that as liquidity increases, profitability increases. Furthermore, the results show that small publicly traded corporations manage to pay their current obligations without compromising their profitability. However, the liquidity and profitability trade-off has its limits. It will become negative at some point which will place small publicly traded corporations at risk of insolvency if liquidity increases past the limits (Ismail, 2016).

Overall, the relationship between WCM and profitability has mixed results because of the diverse variables and testing techniques. This research study used the cash conversion cycle to measure WCM. The variable operating profit to sales measured profitability, and the standard variable for liquidity the current ratio. The findings in this study revealed that WCM does not impact the profitability of small-publicly traded corporations. However, liquidity has a weak impact on small publicly traded corporations' profitability. It will benefit small publicly traded corporations, finance managers, and finance scholars to know that their efforts to maximize profits should focus on other factors. For instance, accounts receivables, inventory, account payables, or credit management practices.

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