A Model for Managing Working Capital Optimally

by

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A Model for Managing Working Capital Optimally

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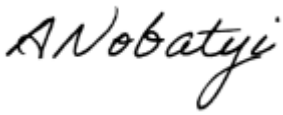

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ABSTRACT

Management of working capital (WC) involves all decisions and actions taken to determine the appropriate level of current assets and current liabilities. Financial managers find it hard to determine the optimum level of WC since they cannot recognise the underlying drivers of WC needs, and research which could provide practitioners with insight into the WC phenomenon is limited. This study adopted design-based research to develop a conceptual model to manage working capital optimally and thereby improve financial performance. It aims to give insight into the underlying drivers of WC, thus enabling the optimum WC level to be determined. The dual focus on building and development of design principles and creating knowledge about these, aims to enhance both practice and research in an educational context. Concept mapping was conducted through ATLAS.ti to depict constituent concepts of working capital, inter-relationships and show the processes that underlie this phenomenon and its management. Thematic analysis was employed to identify pervasive concepts and formulate research propositions which were combined to develop the initial model. Focus groups that comprised financial management practitioners evaluated the effectiveness of the practical intervention and its importance. The concepts emerging from the focus groups' data were mapped through coding to refine the initial model and verify it as the original contribution to knowledge and applied contexts. The final model comprises four (4) interconnected principles which coherently systematise the management of WC. The collaborative management approach is superior to traditional WC management as it optimises WC. The practitioners confirmed the effectiveness of the intervention, its relevance and sustainability. The model aims to orient managers toward decisions and actions regarding current assets and liabilities that are geared towards achieving the corporate strategy. Such goal congruency will achieve the dual goals of liquidity and profitability and thereby maximise value in the long-term.

KEY TERMS: cash conversion cycle, liquidity, optimum working capital level, profitability, strategic alignment, working capital

ISISHWANKATHELO

Ulawulo lwengxowa yokurhwebelana/yoshishino (i*WC*) lubandakanya zonke izigqibo namanyathelo athatyathwayo ukumisela umgangatho ofanelekileyo wezixhobo zokusebenza kunye namatyala akhoyo ngoku. Abaphathi bezezimali bakufumanisa kunzima ukuqinisekisa umgangatho ofanelekileyo we*WC* ekubeni bengakwazi ukuqaphela ezona zinto ezingundoqo kwizidingo ze*WC*, kwaye lunqongophele uphando olunokunikeza iingcali ukuqonda kwesiganeko seWC. Olu phando lusebenzise uphando olusekelwe kuyilo ukuphuhlisa imodeli yengqiqo yokulawula ingxowa yokurhwebelana ngokufanelekileyo kwaye ngaloo ndlela kuphuculwe ukusebenza kwemali. Lujolise ekunikezeleni ingqiqo kwezona zinto ezingundoqo kwi*WC* kwaye ngaloo ndlela lwenza ukuba kuqinisekiswe umgangatho ofanelekileyo we*WC*. Ukugxila kabini ekwakheni nasekuphuhliseni iinkalo zoyilo, kunye nokudala ulwazi ngale mixholo, kujolise ekuphuculeni umsebenzi kunye nophando kwimeko yezemfundo. Ukuqulunqwa okanye ukucwangciswa kwengqikelelo kwenziwe nge*ATLAS.ti* ukubonisa iingcamango ezilawulayo zengxowa yokurhwebelana, ubudlelwane obuphakathi, ukubonisa iinkqubo eziphantsi kwesi siganeko kunye nolawulo lwaso. Kusetyenziswe uhlalutyontyilazwi (i*Thematic analysis*) ukuchonga iingcamango ezixhaphakileyo kunye nokuqulunqa iziphakamiso zophando ebezidityanisiwe ukuphuhlisa imodeli yokuqala. Amaqela ekugxilwe kuwo (*Focus groups*) aquka iingcali zolawulo lwezezimali nathe aphonononga ukusebenza kongenelelo olwenziwayo nokubaluleka kwalo. Iingcamango ezivela kulwazi lwamaqela ekugxilwe kuwo ziqulunqwe ngokuhlelwa kwedatha ukucokisa imodeli yokuqala nokuyiqinisekisa njengegalelo lokuqala kulwazi nakwiimeko ekusetyenzwa kuzo. Imodeli yokugqibela iquka iinkalo ezine (4) ezidibeneyo nezenza ulawulo lwe*WC*. Indlela yolawulo lwentsebenziswano ingaphezulu kulawulo lwe*WC* lwamandulo nanjengoko iphucula i*WC*. Iingcali zikuqinisekisile ukusebenza kolu ngenelelo, ukubaluleka nokuzinza kwalo. Le modeli ijolise ekuqondiseni abaphathi ngezigqibo namanyathelo malunga nezixhobo zokusebenza zangoku kunye namatyala ajoliswe ekufezekiseni isicwangciso soshishino. Ukungqinelana kwale njongo kuza kufezekisa iinjongo ezimbini, ukubakho kwemali yokuhlangabezana nezidingo zeshishini kunye nenzuzo, kwaye ngaloo ndlela kukhulise ixabiso kwixesha elide.

AMAGAMA ANGUNDOQO: Umjikelo wokuguqulwa kwemali, ukubakho kwemali yokuhlangabezana nezidingo zeshishini, umgangatho ofanelekileyo wokusebenza kwemali, inzuzo, ulungelelwaniso lwesicwangciso, ingxowa yokurhwebelana/yoshishino

KGUTSUFATSO

Taolo ya tjhelete ya ditlhoko tsa letsatsi le letsatsi (WC) e kenya diqeto le dintho tse etswang ho laola boemo bo loketseng ba diasete le dikoloto tseo khamphani e nang le tsona nakong ya jwale. Batsamaisi ba ditjhelete ba kopana le mathata a ho laola boemo bo kgotsofatsang ka ho fetisisa ba WC ka ha ba sa kgone ho bona mabaka a amang ditlhoko tsa WC le hore patlisiso e ka hlahisetsang basebetsi lesedi ka WC ha e a lekana. Phuputso ena e sebedisitse mokgwa wa patlisiso o hlahisang mekgwa le mehopolo e metjha e hodisang tsebo e ntlafatsang ditsela tse sebediswang phaposing ya borutelo, ho tla ka tselatshebetso ya ho hlalosa mehopolo ya diketsahalo tsa nnete ka ho di tshwantsha, hore ho kgonwe ho laola tjhelete ya ditlhoko tsa letsatsi le letsatsi ka tsela e tlisang katleho e tla ntlafatsa tsela eo ditjhelete di sebetsang ka yona. Sepheo sa yona ke ho etsa hore ho be le kutlwisiso ya mabaka a amang ditlhoko tsa WC ebe ho kgonwa ho fihlela boemo bo kgotsofatsang ka ho fetisisa ba WC. Sepheo sa diketsahalo tse pedi tse etsahalang ka nako e le nngwe tsa ho tsepamisa monahano kahong le ditataisong tse behwang ha ho hlophisetswa sehlahiswa kapa tshebeletso, le ho tla ka mehopolo e metjha ka tsona, ke ho ntlafatsa boemo le ho matlafatsa tshebetso le patlisiso tikolohong ya thuto. Ho etsa moralo wa dikamano tsa mehopolo e fapaneng ho entswe ka ATLAS.ti ho bontsha mehopolo ya karolo ya tjhelete ya ditlhoko tsa letsatsi le letsatsi, tsela eo dintho tse pedi kapa ho feta di amanang ka yona, le ho bontsha ditselatshebetso tseo e leng motheo wa bohlokwa wa karabo e fumanweng ya potso ena ya patlisiso le tsamaiso ya yona. Ho sebedisitswe mokgwa wa ho hlopholla datha e bokelletsweng ka diinthaviu kapa dikgatiso tsa molomo tse ngotsweng moo ho hlahlojwang mookotaba, dihlooho, mehopolo le ditlhaloso tse tshwanang tse iphetaphetang. Mokgwa ona o sebedisitswe mehopolong e seng e atile le ho tla ka ditshisinyo tsa patlisiso tse kopantsweng ho hodisa mokgwatlhophiso wa ho qala. Dihlopha tseo ho fuputswang ka tsona tse neng di na le basebetsi ba botsamaisi ba tsa ditjhelete di hlahlobile katleho ya dintho tse entsweng ho tlisa phetoho le bohlokwa ba tsona. Mehopolo e hlahileng datheng ya dihlopha tseo ho fuputswang ka tsona e bontshitse kamano ka ho e fetolela puong e utlwisiswang ke khomphyutha ho hlakisa mokgwatlhophiso wa ho qala le ho o netefatsa e le seo ho fanwang ka sona tsebong le maemong ao e sebediswang ho oona ho fihlela sepheo se lebelletsweng. Mokgwatlhophiso wa ho qetela o na le mehopolo e mene (4) e tataisang e amanang, e hlophisang ho ya ka mokgwa o nyalanyang taolo ya WC.

Mokgwa wa tshebetso eo batsamaisi ba sebedisanang le basebetsi kaofela ho utlwa maikutlo le mehopolo ya bona pele ba nka diqeto ke o moholo tsamaisong e seng e le teng ya taolo ya WC ka ha e ntlafatsa tshebetso ya WC. Basebetsi ba netefaditse katleho ya dintho tse entsweng ho tlisa phetoho, ho amana ha tsona le maemo ao ba leng ho oona le ho kgona ho tswelliswa ka mokgwa o tshwanang. Sepheo sa mokgwatlhophiso ke ho beha batsamaisi boemong ba diqeto le dintho tse etswang tse mabapi le diasete le dikoloto tsa khamphani tse hlophiseditsweng sepheo sa ho fihlela lewa la kgwebo. Ho dumellana ho jwalo ha sepheo ho tla fihlela dipheo ka bobedi tsa ho fetola diasete ho ba kontane le ho lekanya phaello ya kgwebo le ditshenyehelo tsa yona, e leng ho tla atisa bohokwa ba yona ka nako e telele.

MAREO A BOHLOKWA: mokgwa wa ho metha phetolelo ya disebediswa ho ba kontane, bokgoni ba ho fetolela diasete ho ba kontane kapa ho fumana kontane, boemo bo hodimo ka ho fetisisa ba tjhelete ya ditlhoko tsa letsatsi le letsatsi, tlhophiso ya diqeto le dintho tse etswang ho tshehetsa phihlelo ya dipheo, tjhelete ya ditlhoko tsa letsatsi le letsatsi

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DEFINITIONS OF TERMS AND CONCEPTS

The researcher will define critical technical terms as they emerge in the specific parts of the study. The definitions of general technical terms used in the study follow.

- Working capital (WC) refers to current assets (CA) and liabilities (CL) (Filbeck and Krueger, 2005).
- Current assets are assets which are expected to be converted into cash within 12 months. Current liabilities are trade obligations expected to be settled within 12 months (Hill, 2013).
- Total assets comprise long-term investments in assets (including intangibles) and current assets (Besley and Brigham, 2015).
- Working capital management (WCM) deals with the mix between CA & CL. It has the dual goals of liquidity and profitability (Smith, 1973).
- Net working capital (NWC) is the difference between current assets and liabilities in an operating period. The surplus of CA over CL represents the funds available to sustain the daily operating activities (Hill, 2013). Such excess is funded with long-term funds, such as debt, equity, or reserves (Besley and Brigham, 2015).
- Net liquid balance (NLB) refers to the difference between liquid components of WC, which include cash, investment in marketable securities and payable securities (Shulman and Cox, 1985).
- Working capital requirement (WRC) refers to the difference between non-financial (operating cycle) components of WC - accounts receivable and accounts payable, accrued expenses and other payables (Shulman and Cox, 1985).
- Liquidity is defined as the ability of a company to pay its financial obligations when they fall due (Hill, 2013).
- Aggressive WC investment policy refers to holding fewer current assets as a proportion of total assets (CA/TA) (Nazir and Afza, 2009).
- Conservative WC investment policy refers to holding a larger proportion of current assets to total assets (CA/TA) (Nazir and Afza, 2009).
- Financial leverage is the extent to which an entity employs borrowings (Correia *et al.*, 2019).

- Strategy refers to the long-term direction of a business, its overall purpose and scope to create business value (Hough *et al.*, 2010).
- The cash conversion cycle (CCC) comprises inventory, accounts payable, and receivables (Lifland, 2011). It is an additive measure of when funds are committed to inventory and accounts receivable minus payments deferred to suppliers.
- The cash-to-cash (C2C) cycle refers to the CCC (Hofmann and Kotzab, 2010).
- The optimal level of WC is the value at which the company maximises its value - where the marginal benefits exceed the marginal cost of WC (Bin, Chen and Tran, 2019a).

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This study focuses on problems encountered in the management of WC in the South African retail and consumer products industry due to the WC-intensive nature. The study, therefore, does not purport to create context-free generalisations but rather to determine the general features of the WC phenomenon (Englander, 2019), helping readers understand WC and the management thereof that could be relevant to their respective settings.

The largest United States (US) retailer in the 1960s, W.T. Grant Company, applied for bankruptcy in 1975, yet it had a price-earnings ratio of nearly 20 times (Largay *et al.*, 1980). Equally intriguing was the fact that the retailer failed to generate cash from operations throughout the decade of its existence until bankruptcy. The year 2000 saw a decline in Amazon.com's share price due to deficient operating cash flows (Filbeck, Krueger and Preece, 2007).

The above cases seem to underscore the saying, "*Cash is King*!" It is considered the lifeblood of every business to sustain daily operating activities such as meeting mature financial obligations and/or exploiting available investment opportunities (Lifland, 2011). Cash may therefore provide a business with flexibility and security during difficult times such as the 2008 credit crunch or, more recently, the Covid-19 pandemic (Bin, Chen and Tran, 2019).

Business entities normally generate cash internally using current assets and, when needed, seek external finance, a costly option. Current assets are cash resources or resources readily convertible to cash, while current liabilities reflect obligations that will soon require cash (Filbeck and Krueger, 2005). Current assets, together with current liabilities, constitute working capital (WC). Maintaining an appropriate mix between current assets and liabilities will enable a company to retain liquidity in the short-term and become profitable in the long run (Bellouma, 2010).

Working capital management (WCM) involves the decisions and actions taken to determine the appropriate level of WC to meet daily operations (Tahir and Anuar, 2011). It is deemed the art of reducing the risk of failure to meet mature obligations while avoiding an excessive level of investment in current assets (Appuhami, 2008).

This balancing act is critical as holding inadequate levels of current assets may hamstring business operations, while excessive levels will bring about high holding costs and low returns. Where a balance is achieved between *risk and efficiency* lies the optimum level of WC (Correia *et al.*, 2019).

Bellouma (2010) decried the limited research on WCM despite its impact on both profitability and liquidity of a company. Focus was placed on capital structure, capital budgeting, investment, and financing rather than determining the drivers of WC to help a company improve its management (Ramiah, Zhao and Moosa, 2014). The existing literature highlights the importance of determining an optimum level of WC to derive short-term solvency and profitability in the long run. This prompted the researcher to explore the phenomenon of WC. Therefore, this study sought to provide insights to broaden the understanding of this phenomenon and improve financial performance.

The layout of this chapter is as follows: discusses the background and context of the study is discussed in Section 1.2. This is followed by the discussion in Section 1.3 of the research problem, its significance, and how the study addresses it. Finally, in Section 1.6, the researcher explains its practical application and concludes with a summary in Section 1.13.

1.2 BACKGROUND TO THE PROBLEM

Management of working capital is crucial to the financial health of a company, as seen in many corporate failures, including the case of the South African national air carrier, South African Airways (SAA), which was placed under voluntary business rescue in 2019 to salvage it following a decade of inability to generate cash internally (Wasserman and Cronje, 2019).

1.2.1 Related research

A brief historical overview follows of developments in understanding the phenomenon of working capital to illuminate the research problem and explain its rationale:

1.2.1.1 Toward a theory of working capital management

Sagan (1955).discussed the role and the function of the money manager (*treasurer*) in managing the cash generated in business operations. This responsibility involved providing sufficient funds to drive business activities and invest temporary surplus

funds profitably. He advised that a money manager should employ a cash flow schedule (*cash budget*) to show cash inflows and outflows.

It was recommended that the cash budget should depict all intended future operations, such as the acquisition of fixed assets, borrowings, or debt repayments. As the concern is cashflows − both current and expected in the short-term − a high WC ratio would be irrelevant when no cash exists to settle due financial obligations (Sagan, 1955).

1.2.1.2 Liquidation perspective of working capital

The earlier focus on the phenomenon of working capital was on whether current assets could be recovered to settle the company's financial obligations in case of liquidation. The liquidation view, together with deficiencies and inconsistencies inherent in the accounting concept of the WC, rendered it inadequate and flawed as a tool for measuring financial performance (Fess, 1966). The focus has since evolved from the liquidation view towards the ability of the company to generate cash in the operating activities sufficient to meet its maturing obligations (Besley and Brigham, 2015).

1.2.1.3 Liquidity & profitability: Dual goals of WCM

Smith (1973) set out to provide guidelines to assist financial management practitioners in managing WC well. He urged managers to employ monthly forecast cash schedules displaying a series of trade-offs between liquidity and profitability. Liquidity and profitability, the dual goals of the WC function, should be balanced against each other by considering the inherent trade-offs. According to Smith (1973), these goals are dynamic in nature as they reflect cash inflows and outflows over a certain period.

1.2.1.4 Releasing the hidden funds

In the 1980s, companies operating in complex-process industries, such as the chemical, drugs, and metal industries, were on the brink of financial ruin due to excessive WC levels (Meyersiek, 1981). The rising external financing costs led these companies to consider current asset reduction methods as a pathway to unnecessarily release the funds tied up in the WC.

Meyersiek (1981) developed a creative alternative approach to reduce WC, which required the involvement of product-line managers (*purchasing, production, sales*) to provide realistic reduction ideas and top management to bring in the bird's eye view of

the business and thereby achieve sustainable improvements in the management of WC. These reduction actions resulted in a 15% - 30% reduction in current assets and yielded a 15% hike in after-tax profit.

1.2.1.5 Working capital management and corporate profitability

The relationship between WC management and corporate performance has received worldwide attention, as evidenced by multiple investigations (Prasad *et al.*, 2019). Various studies, including prominent works by Shin and Soenen (1998) and Deloof (2003), found a strong negative relationship between WCM and profitability. The results implied that managers might improve corporate profitability by reducing current assets to a reasonable level. Yet other studies found a positive relationship between the cash conversion cycle (CCC), a proxy for WCM, and corporate profitability (Gill, Biger and Mathur, 2010).

Recent studies, however, that include Baños-Caballero, García-Teruel and Martínez-Solano (Baños-Caballero, García-Teruel and Martínez-Solano, 2012), Kwenda and Holden (2014), Afrifa and Padachi (2016), Korent and Orsag (2018), Anton and Nucu (2020) point to the existence of an optimal level of WC where company profit can be maximised.

1.2.1.6 The right level of working capital

Ek and Guerin (2011) observed that financial managers often battle to demonstrate the appropriate WC level for the business to board members. Their inability to recognise business drivers of WC needs may make it hard to manage WC efficiently. These authors developed a structured method comprising three (3) phases: determining the ’current level*’* of performance, ‘could-be*’* (optimal level) and ‘should-be’ level. This method would enable companies to determine the right level of WC to optimise financial performance, according to (Ek and Guerin, 2011).

1.2.1.7 Supply chain management approach

Measures such as delaying supplier payments or enforcing strict credit terms fail to appreciate the potential benefits of recognising value networks and supply chains (Hofmann and Kotzab, 2010). These self-serving practices do not benefit the whole supply chain (SC), as small and powerless companies are forced to raise more borrowings to survive or else perish. Hofmann and Kotzab (2010) argue that suppliers

may delay raw material deliveries and be forced to include the capital costs in the cost of goods resulting in the overall higher cost of goods sold relative to other more collaborative supply chains.

Hofmann and Kotzab (2010) investigated the impact of payment terms in a single company and within a supply chain perspective to prove the benefits of a collaborative WC management approach. They found that a collaborative management approach would eliminate duplications and improve process efficiency, thereby reducing operating costs markedly (Hofmann and Kotzab, 2010).

1.2.2 Study setting

Euromonitor expected retailing in South Africa to grow due to the increase in middle-income consumers and online shopping (*e*-commerce) in Africa (Farfan, 2019). However, the South African Council of Shopping Centres' 2015 report revealed that most retail sales still occurred in-store in the face of *e*-commerce (Farfan, 2019). This highly competitive sector faced macroeconomic factors such as low GDP, high unemployment, rising operating costs, lower profit margins, and consumers spoilt for choice (PwC, 2012). Even post-COVID-19, the operating costs bear immense pressure from increased fuel costs, rising interest rates, and costs of imports as the local currency struggles against a strong US dollar (Sen, 2022).

The country's reliance on generators and/or cost of alternative energy supplies in the wake of frequent and extended periods of electricity load-shedding has aggravated the situation. Companies were advised to lower their cost structures and improve operational efficiency to survive the gloomy economic outlook (PwC, 2012). Retailers could reduce business costs through efficient supply chains and enhanced customer satisfaction, thereby retaining sales. These imperatives are pertinent to the decisions and actions of product-line managers as they navigate the misfiring domestic economy. Therefore, managers' decisions and actions may shed light on their perceptions, assumptions, and experiences of the ruling economic conditions.

Some retail companies have expanded into or consolidated their presence in the rest of the continent of Africa. The lure of the fastest growing economies in Sub-Saharan Africa over the period 2010-2014 (Angola and Nigeria grew at average annual rates of 9.2% and 7.7%, respectively) and improving governance in many countries; for

instance, the peaceful 2015 elections in Nigeria, proved very enticing (PwC, 2016). The International Monetary Fund (IMF) (2016) forecast improved growth prospects (2010-2020) for these countries relative to the global average. These prospects flowed from the rise of a middle class in Africa, a young population and rapid global urbanisation. Shoprite Holdings now have over 300 stores in 14 countries, and Tiger Brands and Pioneer foods lead in establishing plants, acquiring companies, or exporting products.

According to the PwC (2016), the following factors may sustain the growth in retail business in the region:

- promising potential of online retail
- growing internet penetration through mobile phones
- private labels (no-name brands) have become trusted brands
- sophisticated loyalty programmes that give retailers better consumer insights
- consumer credit
- increase in local production
- government incentives to encourage local production and thereby boost job creation
- economic blocs (SADEC) and trade agreements (African Continental Free Trade Area Agreement)
- Africa's substantial agricultural potential.

The retail companies in South Africa currently exploit the benefits of initiatives to boost margins and have already piloted these in other countries. However, the lack of quality infrastructure in many African countries may hamper expansion efforts into the rest of the continent. These companies may have to make significant upfront investments in distribution channels and lease payments to shorten the supply chain (PwC, 2016). For instance, it was mentioned that Samsung ships directly to its distributors and retailers to reduce shipping costs.

At the global level, declining levels of cash and investments and Capex spending over the five (5) year period (2014-2019) showed that companies failed to generate positive operating cash flows (PwC, 2019). The report attributed this to the prevailing uncertainty in the global trade environment. Businesses are alerted to looming interest rates aggravating the cost of holding excessive WC. There is a concern that several

companies continue to rely on payables to drive their WC. PwC (2019) discouraged this practice as risky in the long term. Companies are advised to preserve supplier relationships (Nazir and Afza, 2009).

The Covid-19 pandemic impacted WC performance negatively and reduced revenue, affecting various industry sectors and regions in different ways (Windaus, Rosier and Brady, 2020). The retail industry saw increasing inventory levels as customer demand dipped. Slow-paying customers meant delayed payments to suppliers. Poor WC performance was also seen in the industrial manufacturing industry, where it was reportedly driven by SC disruptions and reduced demand, resulting in built-up inventories.

The sector welcomes anticipated reduced trade costs in the world's largest free trade area ushered in by the newly ratified African Continental Free Trade Agreement (AfCFTA) as it emerges out of the Covid-19 pandemic. AfCFTA will boost trade in the continent by 52% in 2022 through lower trading costs due to reduced non-tariff barriers and improved border infrastructure (Maliszewska and Ruta, 2021). Furthermore, retail companies should consider the associated trade-offs inherent in managing WC in line with corporate strategy. This call for trade-offs in managing WC was mooted by Smith (1973).

1.3 PROBLEM STATEMENT

Every business requires cash to sustain its day-to-day operations, reduce dependency on external borrowings and thereby create long-term growth (Lifland, 2011; PwC *et al.*, 2018). Cash is normally generated internally through the use of current assets, namely, inventory, accounts receivable, short-term investments, and, when necessary, external financing. Every company should therefore retain liquidity in the short term and become profitable in the long run to sustain the business (Bellouma, 2010). Liquidity and profitability, the dual goals of WC management (WCM), require a delicate balance as focus on one will hurt the other (Smith, 1973).WCM involves decisions and actions taken to determine the appropriate level of current assets and current liabilities to meet daily operations (Appuhami, 2008).

Inadequate levels of WC hamstring daily operations, increasing the risk of inability to meet mature financial obligations and thereby alienating customers and suppliers (Ek

and Guerin, 2011). However, holding excessive levels of investment in current assets reduces profitability due to the opportunity costs of funds tied up in the WC and high associated costs (warehousing, insurance, and obsolescence) (Appuhami, 2008). In addition, the inherent tendency of operations managers to purchase and hold high levels of inventories and to increase production in anticipation of sales exacerbates the problem (Meyersiek, 1981).

However, financial managers find it hard to determine the appropriate level of WC since they cannot recognise the underlying drivers of WC needs (Harris, 2005). There is, however, limited research in this regard to give practitioners insight into the WC phenomenon as more focus has been placed on capital structure, capital budgeting, investment, and financing rather than determining drivers of WC to help corporates manage it well (Ramiah, Zhao and Moosa, 2014; Adam and Quansah, 2019; Bin, Chen and Tran, 2019; Nastiti, Atahau and Supramono, 2020; Rahman and Ahmed, 2021).

The optimum level of WC lies between risk and efficiency, that is, the risk of inability to meet mature short-term obligations on the one hand and avoiding excessive investment in current assets on the other hand (Correia *et al.*, 2019). At such levels, the business will generate adequate liquidity to sustain daily operations and derive profitability from creating business value in the long term and thereby achieve the dual goals.

Managers need to identify the core drivers of WC to determine the optimum level (Ek and Guerin, 2011). This study, therefore, explores the concept of WC, its components and their interrelationships, the trade-offs inherent in determining the appropriate level to balance risk and efficiency and develops a conceptual model to systematise the management of WC, thereby improving financial performance.

1.4 RESEARCH QUESTIONS

The critical analysis of extant literature and theory of WC revealed that product-line managers often find it difficult to set the appropriate level of WC as they cannot identify the underlying drivers of WC needs. The overarching research question later emerged as, *'*How could management of working capital (WC) be systematised so that companies can manage WC well?*'* The following research questions guided this qualitative study:

Main research question

How could the management of working capital be systematised so that corporate can manage it well?

Sub-research questions

1. How can the underlying drivers of working capital be determined?
2. Is there a right level of working capital?
3. How can working capital needs be balanced?

Businesses can minimise the operational risk, that is, failure to meet mature obligations or sub-optimal returns due to excessive current assets and improve overall performance by setting the right level of WC. This will empower them to navigate any unforeseen circumstances, such as the 2008 credit crunch and the global pandemic, Covid-19 (Oseifuah and Gyekye, 2018).

Setting the right level of WC requires a clear understanding of the role and the underlying drivers of WC (Yilmaz and Acar, 2019). Managers need to consider organisational-wide factors beyond their span of control to derive a business-driven view of WC needs (Harris, 2005). The knowledge of corporate strategy may facilitate the recognition of the drivers of WC needs in a company, seeing that WC drives and maintains business operations, that is, buy, make, and sell (Smid, 2007).

Answering these questions will facilitate decision-making and actions regarding current assets and liabilities that are geared towards achieving the corporate strategy. Such goal congruency will improve the management of WC and maximise business value in the long term (Mousavi and Jari, 2012). Management of WC is a behavioural process underpinned by the practitioners' perceptions, understanding and the meanings they attach to the business environment (Creswell, 2018).

1.5 RESEARCH OBJECTIVES

The main objective of the study was to develop a conceptual model for managing working capital optimally.

The sub-objectives were to:

- give insights and broaden the understanding of the role and drivers of working capital to enable the recognition thereof
- provide the basis for determining the appropriate (optimal) level of working capital
- provide guidelines in balancing the dual goals of WCM - liquidity and profitability.

1.6 SIGNIFICANCE OF THE STUDY

The study aims to contribute to the existing body of knowledge by providing a conceptual model to systematise the management of WC. The model will give guidance to determine the appropriate level of WC and thereby improve overall financial performance. Bellouma (2010) called on academics to research the underlying drivers of WC, as the ability to determine the core drivers of WC will enable practitioners to understand the company's WC needs. The model itself and its development process are also significant: the methodology and literature's insights provide a business-driven approach where managers may focus on the initiatives that have a direct and worthwhile contribution to strategic goals and sustainable competitive advantage of the company.

The traditional financial ratios, that is, current and quick ratios, have been described as inadequate to determine WC performance due to their static nature (Hofmann and Kotzab, 2010). This study highlights the need for businesses to consistently derive greater cash receipts than payments from meeting mature financial obligations (Hill, 2013). Importantly, internally generated funds are considered a source of cheap and internally controlled funds, unlike external financing (Lifland, 2011). Furthermore, surplus funds may enable the business to exploit profitable investment opportunities and provide flexibility and the ability to manage volatility in the economic environment (PwC *et al.*, 2018).

Existing literature highlights the following factors as underlining the need to explore the phenomenon of WC:

- WC drives and sustains the daily operations of an entity
- Current assets constitute more than 50% of total assets
- Managers spend most of their time managing WC

- WCM affects liquidity and profitability
- Inadequate levels of current assets will result in, amongst other things, inventory shortages, low sales, less revenue, and low profitability, thereby alienating both customers and suppliers
- Excessive levels of WC will lock in cash unnecessarily, resulting in high associated costs, namely, the opportunity costs of cash, inventory losses, obsolescence, and high insurance and holding costs (Tahir and Anuar, 2011).

WC is significant in business, and it represents investment made by the company in its business activities. The model orients managers toward decisions and actions regarding current assets and liabilities that are geared towards achieving the corporate strategy. With such alignment, the company will achieve the dual goals of liquidity and profitability, thereby maximising value in the long term.

1.7 RESEARCH METHODOLOGY

Research design or methodology refers to the framework that enables the researcher to plan and conduct research to derive robust findings and achieve the study's purpose (Burns and Grove, 2007).

1.7.1 Qualitative research approach

In choosing the research approach, the researcher was guided by the research problem, questions posed, his researcher experience and the intended audience (Willis, 2012). The researcher adopted a qualitative approach based on the interpretivist paradigm, which recognises research data perceptions and experiences of humans and discourses expressed in texts such as academic articles. This decision was underscored by the nature of the phenomenon of investigation, which primarily involves decisions and actions taken by product line managers to determine the appropriate level of WC to sustain their daily operations.

Financial management is a behavioural process influenced by emotions, fear, or courage to do or not, and this process is largely intuitive rather than rational. What informs management’s decisions regarding the investment in WC became critical for this study. In line with the thinking within the qualitative research realm, the researcher maintains that only understanding the perceptions, assumptions and actions, and the meanings that the practitioners attach to the business environment, can provide

meaningful insights about this social phenomenon. Qualitative research aims to explore and understand the meaning that individuals or groups ascribe to a social or human problem (Creswell, 2018).

Qualitative data can provide rich insights into human participants' activities and the meaning they attach to them (Guba and Lincoln, 1994). The researcher, therefore, selected interpretivism to guide this study to bolster the understanding and extend the theory of WC. This was motivated by the dearth of research into the underlying drivers of WC, as bemoaned by various researchers, including Smith (1973), Belouma (2010), and Bin, Chen and Tran (2019). Furthermore, the fundamental assumption of multiple realities, which vary from one context to the next, resonates well with the dynamic decision-making process (Willis, 2012). It also aligns well with the reality of WC performance differences that exist over time and across industries, potentially varying with ruling macro-economic factors (Filbeck and Krueger, 2005).

1.7.2 Research methods

These are techniques and procedures employed to gather and analyse data during the research inquiry (Burns and Grove, 2007). This study followed a design-based research (DBR) approach to develop a conceptual model for managing WC optimally. Practical research aims to build practical solutions to complex problems in practice and thereby create usable knowledge (Plomp and Nieveen, 2007). This dual focus of DBR is believed to enhance both practice and research in educational contexts.

1.7.2.1 Data collection methods

This study collected data through concept mapping and focus group interviews.

- **Concept mapping**

The researcher conducted concept mapping using ATLAS.ti™, 8 Windows Manual (Qualitative Data Analysis Software), hereafter referenced as ATLAS.ti. This programme enabled the researcher to systematically mine the existing literature for relevant and commonly encountered constructs framing the WC phenomenon. A concept map is a tool for organising and representing knowledge in the form of a diagram which depicts constituent concepts, relationships between them, and the underlying processes (Jankowska, 2014).

- **Focus group interviews**

Two (2) focus groups that comprised financial management practitioners from JSE-listed entities evaluated the effectiveness of the proposed initial model (empirical applicability) in managing WC optimally and its importance (consequences). The practitioners held decision-making authority over WC matters as Chief Financial Officer (CFO) and current product-line managers, respectively. The participants were required to determine the extent to which the model could be accepted and to make suggestions on how to refine it (Hennik, 2014).

1.7.2.2 Data analysis

Qualitative data analysis (QDA) was employed to identify patterns of meaning or common themes in the underlying data that explained the phenomenon of WC and its management. The analysis followed a thematic approach (TA) and adopted Braun and Clarke's (2006) Six-Phase Approach to capture shared meanings and experiences about WC.

The analysis was also broadly conducted in two (2) stages: development of the initial model and verification by the focus group.

- **Initial model**

Data were systematically analysed through coding to identify sections of texts that related to the research questions (research importance), and these were labelled with codes. This was followed by examining the codes to determine similarities or interrelations and grouping them into meaningful units, the themes. Finally, the researcher analysed the themes to identify pervasive concepts and inter-relationships between themes, which together derived the initial model (practical solution). The model, therefore, connected the themes and visually expressed what the data revealed about the research problem and questions (Morgan, 2018).

- **Focus group verification**

The initial model was presented to the two (2) respective focus groups to analyse the rigour of the model. This was followed by a distinct round of coding to map concepts crystallised by the focus groups' data. Themes were constructed similarly to Stage 1

(Initial model). The refined model was verified by the researcher as an original contribution to knowledge and applied contexts.

1.8 MEASURES FOR ENSURING TRUSTWORTHINESS

Within the focus of the DBR approach on developing the conceptual model, the researcher complied with the scientific research guidelines to derive trustworthy research findings. He followed procedures Lincoln and Guba (1985) recommended, namely credibility, transferability, dependability, and confirmability.

1.9 ETHICAL CONSIDERATIONS

All researchers should respect the rights, privacy, dignity, and sensitivities of their research populations, including the integrity of the institutions within which they conduct research (Family Health International, 2004). The researcher implemented the following ethical measures to protect the participants from any psychological and confidentiality risks:

- He first obtained permission from the research participant companies to conduct focus group interviews with their financial management team.
- This study received written approval from the College Research Ethics Review Committee.
- The participants gave informed consent to participate in the research.
- They participated voluntarily in the research and could withdraw at any time during the study.

1.10 LIMITATIONS AND DELIMITATIONS

The limitations and delimitations of the study are presented in the following sub-sections.

1.10.1 Limitations

The researcher collected the data on the strength of his technical knowledge and personal experiences. Methodologically, the research was thus limited through the qualitative lens. Within the context, selected companies were studied (see 1.10.2 below), and this was an empirical (field-based) limitation. The study employed the WC, shareholder, and stakeholder theories from the range of lenses that could be used, and this theoretical choice constitutes a theory-based limitation

1.10.2 Delimitations

This research inquiry focuses only on companies in the South African retail and consumer product sector due to their WC-intensive nature.

1.11 CHAPTER LAYOUT

Each chapter provides an overview of its contents. The layout of the study is set out below.

CHAPTER 1: THE STUDY BACKGROUND

The study begins by describing the conceptual basis of the phenomenon of WC to demonstrate its significance and how it would extend the existing understanding of WC. Thereafter, a brief historical overview of developments in the domain of working capital is presented to articulate the research problem, and the ways the study addresses the problem and its contribution to the existing body of knowledge are discussed.

The discourse includes the description of the research design and why it was selected to address the research problem and research questions. Finally, the researcher discusses ethical measures to protect the research participants, the limitations and delimitations of the research design, and defines the terms used in the study.

CHAPTER 2: THEORETICAL FRAMEWORK

The theories relevant to the research problem are discussed. This discussion includes a critical examination of the theory underpinning WC and its management to enhance understanding of the research problem and rationalise the study.

CHAPTER 3: THE LITERATURE REVIEW

There is an in-depth analysis of relevant scholarly work to position the thesis of this study. The researcher analyses and discusses existing works in working capital and its management to determine the current state of research in this domain as well as research gap(s) and tensions.

CHAPTER 4: RESEARCH METHODOLOGY

The researcher describes the methodology and procedures selected for the investigation and employs authoritative sources to justify the selection. The nature and sources of data that will be collected to answer the research questions are discussed, including the data-gathering instruments and data analysis (approach and process). Finally, the measures taken to derive trustworthy research findings in an ethical manner (related ethical considerations) are described.

CHAPTER 5: PRESENTATION AND ANALYSIS OF DATA GATHERED

This chapter contains a summary of collected data, a discussion of the analysis of data and the interpretation of the findings in relation to the research questions. It starts with a brief overview of the research process, describing the process of collection and analysis of data.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter starts with the restatement of the significance of this study and how it bolsters understanding of the phenomenon of WC. It summarises the main findings, conclusions, and recommendations for future research. The significant contributions and conclusions flowing from this study are also discussed.

1.12 CHAPTER SUMMARY

This chapter provided a brief overview of the background and context of the phenomenon of WC, followed by a discussion of the research problem and the significance of conducting the study, how the study addresses the problem, and finally, its practical application.

The brief overview of related research showed that the focus had evolved from the liquidation perspective to the ability of the company to meet its maturing obligations from cash generated in the operating activities. Every company should retain liquidity in the short term and become profitable in the long run. However, it is critical that a delicate balance is maintained between these dual goals, as focusing on one will compromise the other.

Managers may, according to existing literature, find it hard to determine the appropriate level of WC unless they recognise business drivers of WC needs. There is, however,

limited research giving practitioners insight into determining the drivers of WC needs. This study, therefore, seeks to develop a conceptual model to guide management in setting the appropriate level of WC and thereby improving financial performance. The model aims to orientate managers toward decision-making and actions that are congruent with corporate strategy and creating business value.

The study follows a qualitative research approach based on the interpretivist-paradigm to answer the research question: ’How could the management of working capital be systematised so that companies can manage WC well*?’* The interpretivist paradigm recognises perceptions and experiences of humans and discourses expressed in texts as research data. The phenomenon of WC primarily involves product-line managers’ decisions and actions to determine the appropriate level of WC to sustain daily operations. Research data were collected through concept mapping and focus group interviews. Data analysis was done through a thematic approach (TA) to capture shared meanings and experiences about WC.

In the following chapter, the relevant theories which contributed to the creation of a theoretical foundation for this study are discussed.

CHAPTER 2: CONTEXT AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

In the previous chapter, the researcher began by discussing the background and context of the study, followed by the research problem, its significance and how the study addresses it. In this chapter, relevant theories that guide this research and support the researcher's understanding of the research problem and analysis of data are discussed (Grant and Osanloo, 2014). As the theoretical framework describes concepts and interrelationships of the phenomenon under investigation, it provides a valuable map to guide qualitative research (Garvey and Jones, 2021).

The layout of this chapter is as follows: the theoretical underpinnings of working capital (WC) are discussed in Section 2.2 by first deconstructing the traditional accounting concept of working capital and orienting the discourse towards profitability and liquidity, the dual goals of working capital management (WCM). This is followed by the discussion in Section 2.3 of the two (2) dominant theories that underlie the philosophy of corporate management; that is, the shareholder (wealth maximisation) and stakeholder theories to position WCM. Finally, in Section 2.4, the researcher explores the decision-making process to frame the understanding of the decision-making behaviour of product-line managers as they pursue the dual goals of WCM. The chapter concludes with a summary in Section 2.5.

2.2 THE CONCEPT OF WORKING CAPITAL

Working capital (WC) refers to funds that drive business operations and can be defined as current assets minus current liabilities (Smid, 2007). It constitutes a significant proportion of business total assets (greater than 50%) and pervades various business processes. The traditional accounting approach to WC and its function as a metric to determine financial performance in a business are presented in the following sub-sections.

2.2.1 The liquidation perspective

According to Hill (2013), the WC position is considered very important as it indicates financial strength, which is the ability of a company to pay its obligations when they fall due. Also, it is employed by external users as a measure of creditworthiness through

the use of the current ratio ($\frac{Total\ current\ assets}{Total\ current\ liabilities}$). The traditional accounting approach refers to WC as the difference between current assets and liabilities, also called net working capital (NWC). Such excess is funded with long-term funds, such as debt, equity, or reserves (Besley and Brigham, 2015).

The traditional accounting perspective regards a current ratio of 2:1 as financially sound and benchmarked with a minimum WC position of 1:1 (Hill, 2013). External users feel comfortable/confident when corporate solvency exists since it indicates a potential to continue operating. Conversely, the lack of WC commits future cash inflows to make good existing financial obligations and not generate profit (Hill, 2013). However, Besley and Brigham (2015) argue that a high current ratio does not guarantee that a company will have the cash required to meet its needs.

Since current assets are recorded in the Statement of Financial Position (Balance sheet) at historic cost in terms of the International Financial Reporting Standards (IFRS), they do not provide the best measure of the margin or buffer required to settle the maturing obligations within the daily business operations (Fess, 1966). The Statement of Financial Position is simply a cost-based record of the current financial position (Hill, 2013). Furthermore, as current assets vary in liquidity, the liquidation value of current assets cannot accurately indicate adequate liquidity (Shulman and Cox, 1985).

Financial analysts employ the liquidity or Quick ratio in evaluating the liquidity position more accurately, thereby plugging the gap in the solvency ratio (Hill, 2013). This metric is calculated as the total liquid assets $[\frac{currents\ assets\ excluding\ inventory}{Total\ current\ liabilites}]$, with a ratio of 1:1 being the lower limit. This ratio seeks to quantify the assets that can be quickly converted into cash to settle short-term debts without necessarily relying on the sale of inventories. A one-year horizon is used to classify current assets and liabilities, meaning that the former will be realised, and the latter fall due within a year (Hill, 2013).

The conventional liquidity ratios are premised on the notion that a company will liquidate all its current assets to settle all the current liabilities (Lifland, 2011). It follows that the accounting notions of solvency and liquidity will only hold true when the company ceases to trade (Hill, 2013). Yet investors view businesses as going concerns (Lifland, 2011). The ‘going concern’ notion depends on generating adequate cash

resources to settle maturing liabilities and not on the liquidation value of business assets (Shin and Soenen, 1998).

Since the NWC cannot be considered a proxy for cashflows, this study focuses on what the researcher considers an alternative; the cash conversion cycle (CCC).

2.2.2 The debt-paying ability

Current assets are employed in business operations to generate cash internally to pay financial obligations. Cash is used to purchase raw and finished materials, operating supplies, labour, and other factory services (Fess, 1966). These inventory costs are converted to accounts receivable during sales and cash once again upon collection, the operating cycle. The delay between the expenditure on the purchase of raw materials (inventory) and the collection of the sale of the finished product results in WC (Besley and Brigham, 2015). During this period, while the funds are tied up in current assets, a business must seek external financing to pay for materials and labour and thereby sustain its operations, according to Besley and Brigham (2015).

An efficient operating cycle or short CCC is therefore required to derive adequate liquidity and not the current assets surplus (NWC). WC management should focus on the ability of a company to generate cash flows by utilising its current assets, adequate to meet its maturing financial obligations. Investors even attach value to cash conversion efficiency, as demonstrated by a positive relationship between a company's return and its cash conversion efficiency rank (Filbeck, Krueger and Preece, 2007). These authors investigated whether shareholders reward companies with a short operating cycle ('converting sales to cash today').

A discussion follows concerning what Fess (1966) called 'inherent limitations of the traditional accounting concept of WC', which rendered it flawed and inadequate to measure financial performance.

2.2.3 Accounting concept of WC: Limitations

The notion that the current assets surplus indicates financial strength is misleading and conflicts with the normative objective of wealth maximisation (Hill, 2013). Furthermore, the liquidation perspective focuses only on those assets realisable within a year since traditional accounting dictates that current liabilities should not be applied to long-term

investments. Yet, as Hill (2013) contends, management often does exactly that when they use an overdraft facility to support fixed assets.

Fess (1966) questioned the validity of classifying some resources as current while they exhibit fixed properties. He argued that although inventories may be turned over several times, these are consistently replaced by other items, and so are current liabilities. To prove that this classification is flawed, Fess (1966) labelled the following factors as limitations inherent in the accounting concept of WC:

- liquidation viewpoint of WC
- inconsistent valuation of WC
- inconsistent classification of current assets and liabilities.

These factors formed the basis of Fess's thesis that the accounting concept of WC is not entirely logical. It is noteworthy that several decades later, various studies (Shin and Soenen, 1998; Filbeck, Krueger and Preece, 2007; Hill, 2013) found that the evaluation of WC performance should rather focus on the ability of a company to generate cash flows. Hofmann and Kotzab (2010) went further and criticised traditional ratio-analysis for ignoring the potential benefits of inter-organisational relationships; they argued that the ratios consider only accounting and management aspects. However, their study and its findings are discussed in more detail in Chapter 3.

The call for focusing on the business' ability to generate positive cash flows will guide the researcher in determining how to balance WC needs. Smith (1973) urged businesses to maintain a balance between liquidity and profitability objectives. These dual goals of WCM are explored in depth in the following discussion.

2.3 THE DUAL GOALS OF WORKING CAPITAL: LIQUIDITY AND PROFITABILITY

When a business cannot generate cash from its operations, the resultant cash gap will force management to seek external financing to sustain daily operations, an expensive source of funding which may adversely affect profitability (Lifland, 2011).

A description and discussion of the operating cycle follow.

2.3.1 Cash is King!

The following examples demonstrate the dire consequences of cash deficits in a business. The state broadcaster, the South African Broadcasting Corporation (SABC), approached Parliament in 2019 cap-in-hand as it was fast approaching day zero when there would be no cash to pay staff salaries. South African Airways (SAA), the national carrier, was placed under voluntary business rescue to salvage the airline after a decade of failure to generate cash and having to survive on substantial bailouts from the state (Wasserman and Cronje, 2019). Amazon.com's share price decreased markedly in 2000 owing to substantial negative cash flows (Filbeck, Krueger and Preece, 2007).

Cash is indeed the oil that lubricates business wheels, as it can reinvigorate operations or dampen them (Lifland, 2011). If the flow of WC were instantaneous, there would never be cash deficits or surpluses, provided that the volume of inflows equals the outflows (Hill, 2013). Employing a diagrammatic presentation (Figure 2.1), Hill (2013) depicted the cycle of events that convert raw materials to cash (operating cycle).

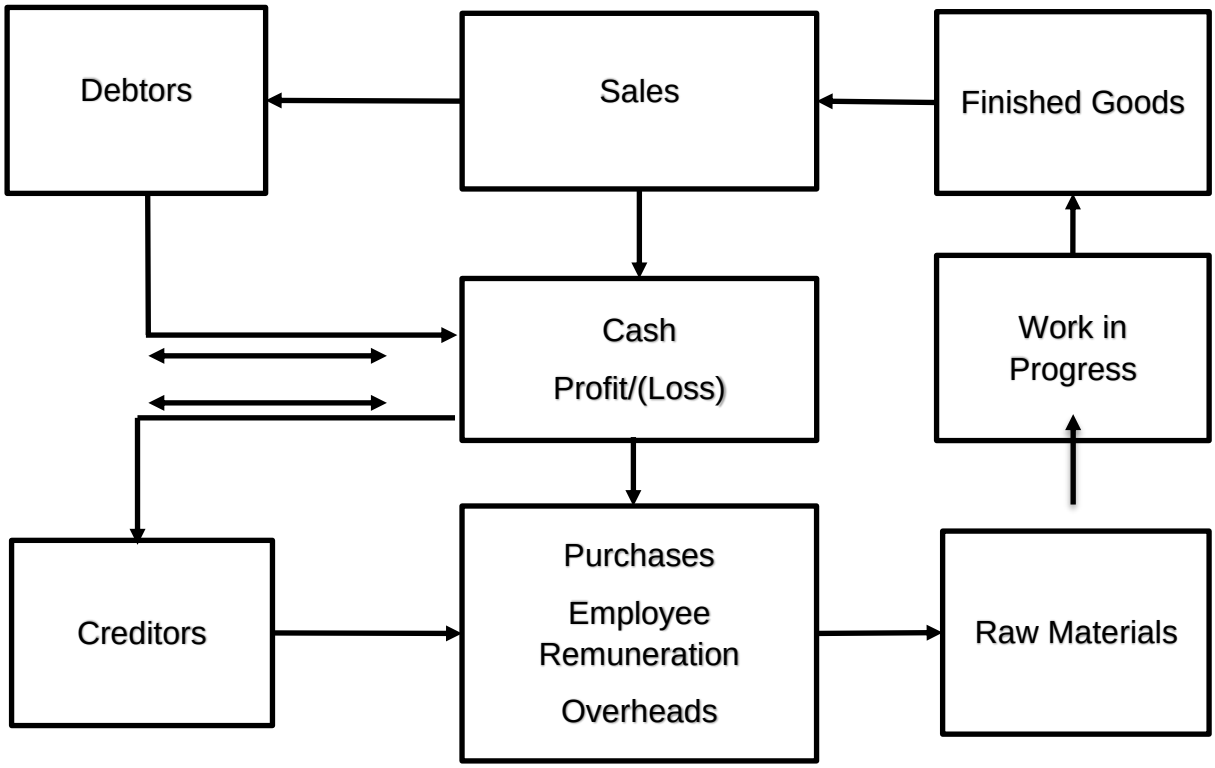

Figure 2.1: **The structure and flow of working capital**

Source: (Hill, 2013)

The diagram shows that debtors represent a cash claim, as do the inventories which have yet to be sold. These interruptions to cash flow are often offset by delaying payment for raw materials already committed to production, creating creditors. All these activities may result in a cash surplus, deficit or zero balances on any day (Hill, 2013).

Conventionally, NWC − that is, the excess of current assets over current liabilities − is used to measure the level of liquidity and whether it meets the probable immediate demands on it. Simply put, the greater the current assets, the higher the liquidity level, and less liquidity increases reliance on current liabilities. As mentioned earlier, this measure has been branded inadequate due to the static nature of traditional current and quick ratios and varying degrees in the liquidity of its components (Shulman and Cox, 1985; Shin and Soenen, 1998). Positive cash flows, and not WC ratios, give an adequate measure of financial strength since current and future cash flows sustain operations (Lifland, 2011). An efficient operating cycle, that is, a short CCC, will increase cash and thereby minimise WC needs (Hill, 2013).

Every business should generate enough funds to operate and meet its financial obligations when they fall due. It should hold enough readily available cash to pay for goods and services. However, care should be taken not to keep idle cash as it is unprofitable (Hill, 2013). This call resonates with Sagan (1955), thinking that the treasury should temporarily invest surplus funds as profitably as possible, given the safety and liquidity requirements. Drawing up a cash flow schedule (cash budget) could help the treasury in its role to channel funds into operations and maximise the use of temporarily idle funds generated by the business.

The cash budget depicts cash inflows and outflows, planned sales and production, including costs such as fixed asset additions, capital acquisitions, dividends, and repayment of borrowings. It casts a spotlight on the business's ability to generate cash inflows adequately to meet its cash outflows (Besley and Brigham, 2015). Cash management may involve delaying borrowing even in low liquidity if liabilities such as taxation or other payables are not immediately due. Also, the financial manager may be forced to seek external financing to meet due obligations despite the sizeable WC position, which is primarily in inventory and accounts receivable, as Sagan (1955) maintained.

Corporate managers should, however, guard against focusing solely on liquidity, as a high liquidity level results in low profitability (Lifland, 2011). A long cash conversion cycle (a 'cash gap') will reduce profitability as liquidity is tied up in the WC (Shin and Soenen, 1998). The opportunity cost of these funds ('lost investment income') and inventory holding costs, including insurance, obsolescence, and bad debts, all render the holding of high levels of WC a costly and inefficient exercise due to the associated costs (Ek and Guerin, 2011).

A discussion of the other goal, profitability, follows.

2.3.2 Deriving profit for long-term survival

Every company must be profitable in the long run to create value for its shareholders. Reducing and holding a reasonable level of current assets will decrease financing costs and increase profitability (Nazir and Afza, 2009). They maintain that prompt collection of sales will increase cash to purchase additional inventories, leading to increased sales and profit.

Holding low levels of WC could, however, result in low liquidity and inventory shortages (Nazir and Afza, 2009). In this case, there would be no cash resources to settle maturing obligations and no product to sell, adversely affecting suppliers and customers (Ek and Guerin, 2011). However, extending accounts payable could provide businesses with additional cash to support additional inventory purchases. Care should, however, be taken to preserve relationships with suppliers (Nazir and Afza, 2009).

The ability to balance the risk of failing to meet financial obligations with holding the appropriate level of investment in current assets is the function of WCM (Appuhami, 2008). The trade-offs inherent in management decisions may be tactical or strategic; for instance, allowing a major customer to pay late and setting a precedent for extended credit (tactical) or granting extended payment terms to acquire a major contract (strategic) (Ek and Guerin, 2011). A business should derive profit and create value for its shareholders for long-term survival.

As WCM involves decisions and actions about the level of current assets and the financing thereof, a discussion of policies companies may adopt in this regard; namely, conservative or aggressive WC policies, now follows.

2.4 WORKING CAPITAL POLICIES: AGGRESSIVE, MODERATE AND CONSERVATIVE

Management should set an appropriate level of WC; in other words, maintain a proper balance between the individual WC components, namely, inventory, accounts receivable and accounts payable (Filbeck and Krueger, 2005). The optimum level of WC lies between the two (2) extremes of aggressive and conservative WC policies (Correia *et al.*, 2019). Weinraub and Visscher's 1998 study examining the WC policies in 10 diverse industry groups found a negative correlation between industry asset and liability policies and that relatively aggressive WC asset policies were balanced by conservative financing policies.

2.4.1 Aggressive working capital investment policy

An aggressive investment policy (AIP) is characterised by a minimal level of investment in current assets relative to fixed assets. The business holds fewer current assets as a proportion of its total assets (Nazir and Afza, 2009). Therefore, a high return on assets (ROA) is expected due to the relatively low asset investment. Research has shown that reducing the level of current assets to a reasonable extent will increase profitability due to the short CCC (Shin and Soenen, 1998).

The resultant increased positive cash flows may not only reduce reliance on costly external finance but also afford businesses the flexibility and scope to drive expansionary initiatives and/or invest in available profitable opportunities (Appuhami, 2009). Less profitable companies may be more inclined to reduce account receivables to speed up their CCC, an aggressive WCM approach. The shorter CCC is considered valuable as it leads to a higher net present value of cash flows generated by assets, thereby increasing business value (Shin and Soenen, 1998).

The downside, though, is the increased risk of production disruptions and inventory shortages, which could result in reduced sales (Correia *et al.*, 2019). Similarly, an overly stringent credit policy to reduce accounts receivable may reduce sales and subsequently reduce the expected return. Reduced current assets could create liquidity problems that would make it difficult to meet maturing financial obligations, damaging relationships with suppliers and increasing financing costs (Correia *et al.*, 2019).

It is these challenges − that is, the decisions on WC policies − that direct this qualitative investigation of the WC phenomenon. Smith (1973) explained that trade-offs are inherent in WC policies which determine the levels of individual components of WC capital rather than the levels of current assets and liabilities.

2.4.2 Conservative working capital investment policy

In contrast, a conservative WC investment policy will see a relatively larger proportion of liquid assets with a pronounced risk of reduced profitability. Given that idle cash is unprofitable, business is urged to hold a minimum level commensurate with business operational needs (Hill, 2013). There will, of course, be less risk of production disruptions and inventory shortages but also an undesirable reduction in expected returns. A large investment in net working capital hamstrings performance due to the opportunity cost of funds tied up in the working capital and/or financing costs (Nazir and Afza, 2009). High costs are associated with holding excessive inventory, including warehousing, insurance and obsolescence, which would aggravate the situation (Ek and Guerin, 2011).

On the other hand, an aggressive financing policy (AFP) will have high current liabilities relative to long-term debt, resulting in an increased potential liquidity risk (Nazir and Afza, 2009). Current liabilities may even be used to finance part of non-current assets. This differs from a conservative financing policy where management employs more long-term debt relative to current liabilities. Conservative financing policies are often employed to balance the relatively aggressive WC asset policies (Nazir and Afza, 2009).

An aggressive WC policy may derive savings in the costs associated with large inventories, such as storage, insurance, and obsolescence. Potential strict collection of account receivables will provide businesses with cash for further purchases of raw materials to increase sales and profits. The resultant increased cash will also reduce the need for external financing and thereby saving on financial charges and allow businesses to take advantage of profitable investment opportunities that are available (Bellouma, 2010).

Concerning the increased risk of production disruptions and inventory shortages, which could result in reduced sales, Correia *et al.* (2019) suggested that businesses should

hold minimal current assets to the extent that marginal returns derived exceed the risk associated with low investment in WC. In addition, the prevalence of advanced IT systems has reduced the risk of inventory shortages (Correia *et al.*, 2019). These two sides of the same coin seem to underscore the need for managers to consider trade-offs inherent in the WC policies when determining the appropriate level of WC.

Profit is a metric normally used to evaluate the performance of corporate management (Korent and Orsag, 2018). Corporate performance may be affected by the governance of the business, as well as the behaviour and decision-making of managers. The tenets of shareholder and stakeholder theories − the respective underlying assumptions of behavioural decision-making to frame the understanding of corporate management − are discussed below.

2.5 SHAREHOLDER THEORY: AGENCY RELATIONSHIP

Companies originated in England in the nineteenth century and were accorded a right to engage in business to derive a profit (Grant, 2003). The system of free enterprise and capitalism fuelled the accelerated growth of companies in the US. During the industrial revolution, companies, both public and privately owned, grabbed the opportunity to raise capital through the public sale of shares, resulting in widely held ownership. This brought about Berle-Means companies, that is, companies with passive owners separate from executive management (Berle and Means, 1932). The dispersion of share ownership led to the loss of control by shareholders as ownership was separated from control (Aglietta, Rebérioux and Reberioux, 2005).

The owners (principals) delegated some decision-making authority to the managers (agents) to perform certain services on their behalf (Jensen and Meckling, 1976). Such an arrangement between shareholders and corporate management constitutes an agency relationship. The objective of the principal-agent dyad is to maximise the principal's welfare. Corporate managers, as agents for owners, have a fiduciary duty to safeguard owners' interests within the legal ambit.

Agents will, however, not always seek to maximise the welfare of principals because of the self-interested behaviour inherent in individuals (Jensen and Meckling, 1976). When conflicted, they act in their interests unless their behaviour is monitored or controlled against self-interest (Bryant and Davis, 2011). Self-interested behaviour

may manifest in acts such as siphoning off funds, shirking or suboptimal investment (Fleming, Heaney and McCosker, 2005).

Principal(s) incur agency costs to limit the divergent behaviour of managers, and these are part and parcel of an agency relationship (Jensen and Meckling, 1976). Agency costs comprise the sum of the following:

- monitoring of expenditures by the principal
- bonding of expenditures by the agent
- residual loss (reduction in the principal's welfare due to divergence).

The principal will bear all these costs because of their vested interests and the benefits that far outweigh the losses.

The agency theory views a company as a nexus of a set of contracting relationships among individuals with conflicting interests and goals. Yet managers are the only group of stakeholders who control the decision-making tools of the company (Hill and Jones, 1992). Challenges that mar the agency relationship have led to calls for managers as fiduciaries of shareholders to maximise shareholders' wealth (Hill and Jones, 1992).

In the following section, this discussion extends to normative theory, the objective of financial management.

2.6 SHAREHOLDER WEALTH MAXIMISATION: NORMATIVE THEORY

The widespread growth of the Berle-Means companies in the late twentieth century was concomitant with the rise of shareholder primacy (Chu, 2012). Jensen and Meckling (1976) argued through their widely accepted agency relationship theory that shareholder primacy would reduce agency costs. Shareholder primacy theory requires managers to run companies for the benefit of shareholders, that is, maximising shareholders' interests ahead of other stakeholders. When conflicted, corporate management should make decisions that would benefit shareholders and produce wealth for them only (Keay, 2010).

Essentially, shareholder primacy drives the pre-eminence of the shareholder in relation to other stakeholders and renders other responsibilities subordinate or derivative (Keay, 2010). The interests of other stakeholders are considered relevant to the extent that they contribute to shareholder wealth maximisation. This, however, overlooks the

fact that total disregard for other corporate constituencies could harm the corporate objective through the loss of specific investments from them (utility loss).

For instance, a company that fails to meet its mature obligations may damage relationships with its creditors and alienate them, making it hard to sustain its operations. The reality is that such a situation will harm the interests of even the shareholders. One may look no further than the devastating impact of load shedding on the South African economy, as the government utility company cannot generate sufficient energy for national needs (BusinessTech, 2021).

Critics of shareholder theory have raised the following problems (Tse, 2011):

- Complete disregard for other stakeholders' interests will harm even eminent shareholders
- Performance-linked remuneration may induce divergent managerial behaviour. Greed and immorality of corporate leaders were regarded as largely the cause of recent corporate failures in America and elsewhere in the world
- Over-confident managers may under-estimate risks or over-estimate potential value gains, making large and risky bets, as witnessed in the 2008 financial crisis ('credit crunch').

US legislators responded by expanding the fiduciary duties of directors to include other stakeholders as well. They mandated directors to report the social and environmental impact of their business operations in the annual report (Chu, 2012). In South Africa, the King Code on Corporate Governance set standards for ethical and effective leadership for boards and directors of JSE-listed companies, financial institutions, and certain state-owned companies (SOEs) (IDSA, 2009). Directors may take any action to safeguard the interests of shareholders provided it is lawful, as any unlawful act will pose risks that could negatively impact the financial position of shareholders.

The growing prominence of social and environmental issues has seen the integration of stakeholder orientation with managerial decision-making. Collaboration is fostered between various constituencies to achieve corporate goals and create benefits for all involved. Business schools have now begun to integrate these concepts in their core and extra-curricular courses to focus attention on serving the greater good (Chu, 2012). Master of Business Administration (MBA) students have taken to integrated

decision-making like ducks to water (Tse, 2011). All this indicates that calls for multi-stakeholder focus are now bearing fruit (Chu, 2012).

Given these debates, this study follows the view that wealth maximisation is only a standard to manage the principal-agent dyad and that companies have a social mandate to look beyond corporate profitability and serve the public good.

Stakeholder theory, with a specific focus on its normative thinking, goals, and assumptions, as well as its shortcomings, is discussed next.

2.7 STAKEHOLDER THEORY

A company represents a nexus of contracts and relationships between multiple groups with conflicting interests and goals (Jensen and Meckling, 1976). All these groups have a stake in business operations and should therefore be considered in managerial decision-making (Freeman and Phillips, 2002). They have contributed something to the corporation, whether in an active or passive capacity and impact or are impacted by its policies and operations. The balancing of the rights of these multi- stakeholder groups in decision-making will improve stakeholder relationships and thereby positively influence corporate profitability (Rausch, 2010a).

Stakeholder theory fails to distinguish between divergent stakeholder interests, however (Mainardes, Alves and Raposo, 2011). Its detractors question its validity and practical value, citing a lack of clarity on managing conflicting stakeholder interests and attaining multiple goals. These critics highlight the following shortcomings of stakeholder theory:

- The term ‘stakeholder’ is not clearly defined and is used differently in different ways based on a diverse range of evidence and contradictory arguments
- Freeman (1984) did not provide a theoretical base to define the behaviour of the company or stakeholders
- Although Freeman (1984) identified stakeholders as disparate groups, other researchers argue that these should be identified in terms of their interests
- The influence of the environment on the relationship between the company and its stakeholders is not considered.

Mainardes, Alves and Raposo (2011) bemoan the slow progress in the development of theoretical underpinnings despite the rapid growth of stakeholder theory from the onset of the twenty-first century.

The following table shows Rausch's (2010a) summary of the differences between the two (2) theories.

Table 2.1: Shareholder theory versus stakeholder theory

	Shareholder theory	**Stakeholder theory**
Corporate philosophy	Profitability	Responsibility
Corporate ends	Meeting shareholders' goals	Meeting the interests of all stakeholders
Long-term objective	Shareholder utility maximisation	Value creation for all stakeholders
Stakeholder interests	Means to the end of the company's profitability	Ends and means
Social contribution	Driven by self-interest	Serves the collective

Source: (Rausch, 2010a)

The differences in Table 2.1 suggest that managerial behaviour and decisions will vary with the type of normative approach a company adopts. Arguably, the behaviour and decision-making of managers cannot be presented in binary terms, namely, shareholders versus stakeholders or even single goal versus multiple goals. The assertion that managers will always act opportunistically and out of self-interest is too narrow and simplistic to explain human behaviour and is out of touch with complex reality (Fehr and Schmidt, 1999).

Individuals have shown a willingness to cooperation as they possess a high level of cognitive ability to recognise when their actions will impact negatively on others' interests (Pietsch, 2016a). Studies in sociology and psychology have found a wide range of human motives (achievement, responsibility, altruism, and respect for authority) and shown that managers consider multiple values when making decisions (Rausch, 2010a). These self-actualising managers may work from a sense of duty without conflict between self-interest and organisational needs.

The altruistic behaviour of collective-serving managers deviates from rational economic theory and rather leans toward pure stakeholder theory (Rausch, 2010a). This also suggests that there may be companies which practise mixed forms of corporate orientation (Rausch, 2010a). Several researchers deem these managerial stewards as moral individuals who protect corporate assets and make decisions in the best interests of all stakeholder groups of a company. It is believed that managers are effectively agents of all stakeholders since they hold contractual relationships with all of them.

However, the reality is that managers will always be confronted with conflicting claims of other stakeholders and/or conflict between individual and others' claims. This researcher contends that it would not only be limiting but too simplistic to frame the understanding of management decision-making behaviour solely through the underlying assumptions of these two (2) predominant theories. This study explores the product line managers' perceptions and understanding of the business environment when making decisions about current assets and the financing thereof. It is, therefore, important to bear in mind that such behavioural assumptions are dynamic and may evolve.

The results of empirical surveys of 100 companies randomly drawn from Fortune 500 showed that about 22 companies focused on goals beyond the two *(2)* theories' forms of orientation (Rausch, 2010a). For this reason, the next step is to explore factors influencing managerial decision-making behaviour to frame the understanding of corporate management. The decision-making processes facilitate the understanding of management actions, that is, the decision(s) regarding WCM policy (Novicevic, Clayton and Williams, 2011).

2.8 DECISION-MAKING

The social environment provides a contextual framework for decision-making at an individual level (Novicevic, Clayton and Williams, 2011). In his seminal work, *The Functions of the Executive,* Barnard (1971) has modelled this process as several interdependent stages that occur simultaneously or sequentially, as shown in Table 2.2.

Table 2.2: Barnard's seven stages of decision-making

STAGE	DESCRIPTION
Stage 1	The apprehension and acceptance of the end-in-view
Stage 2	The organisation of the situation
Stage 3	The discrimination of the factors of the situation
Stage 4	The discrimination of alternatives
Stage 5	The integration of alternatives and end-goal
Stage 6	The translation of the strategic factors in terms of acts
Stage 7	The fixing of choice

Source: (Novicevic, Clayton and Williams, 2011)

Stage 1: The apprehension and acceptance of the end-in-view (goal adoption)

Individuals will consider alternate goals they want, desire, or need (Novicevic, Clayton and Williams, 2011). These goals may be presented internally through the cultural environment (habits, past experiences, or instincts); externally, from other individuals, companies, or society; or through a combination of internal and external factors. The individual will be more inclined to adopt a goal that aligns with their individual and societal view.

Stage 2: The organisation of the situation (goal context)

Once adopted, the goal will illuminate the situation and allow the decision-maker to organise the decision-making process by focusing on its objects, elements, and intrinsic factors/features.

Stage 3: The discrimination of the factors of the situation (filtering)

The individual will select those factors that will significantly impact the achievement of the adopted goal based on habit, experience, or intuition.

Stage 4: The discrimination of alternatives (assessing the best alternative)

Where multiple goals have been selected, further evaluation thereof continues to reduce the alternatives.

Stage 5: The integration of alternatives and the goal (resolution to act or not to act)

The objective of this stage is to reduce alternatives to one so that a decision may be made on whether to act on it. Barnard (1971) suggested three (3) ways, namely:

- to align alternatives
- to modify the adopted goal
- to search further for alternatives.

Where no alternative has been selected, new options will be considered, or the goal will be changed (Barnard, 1971).

Stage 6: The translation of the strategic factors in terms of acts (implementation)

The decision-maker will act on the decision, as failure to act will amount to negative action.

Stage 7: The fixing of choice (execution)

It is mentioned that a decision to act or not is fraught with emotions, and fear or courage will come into play. This difficulty may be attributed to the intuitive nature of the decision-making stages (Barnard, 1971). *Actions based on rational decisions will more likely be implemented than those based on intuitive ones.*

In their comparative study of Barnard's (1971) and Mitchell and Beach (1990) contemporary models of decision-making (image theory), Novicevic, Clayton and Williams (2011) found the similarities and differences shown in Table 2.3.

Table 2.3: Comparative analysis between Barnard and image theory models

	BARNARD	**IMAGE THEORY MODEL**
Similarities		
Decision trigger	Guiding beliefs based on social conventions	Value image based on social acceptance
Formation of alternatives	Desirable ends-in-view (framing of the situation)	Desired outcomes (context gives meaning)
Differences		

	BARNARD	IMAGE THEORY MODEL
View of intuition	Intuitive (’gut feeling’)	Heuristic
Screening of alternatives	Alternatives are narrowed down to one for which a ’do or do not’ choice is made	A few compatible alternatives for the profitability of choice are considered

Source: (Novicevic, Clayton and Williams, 2011)

Barnard (1971) stated that the individual will be more inclined to adopt a goal that aligns with their individual and societal view. Similarly, the image concept (image theory) mentions the importance of the decision-maker’s guiding beliefs and values in determining what is appropriate (Novicevic, Clayton and Williams, 2011). Both models contend that decision-making is motivated by the need to achieve a desired outcome or the individual’s want, desire or need (Novicevic, Clayton and Williams, 2011). The decision is framed by the context (conditions and settings) of decision-making; that is, only factors important to the goal are considered.

Differences between the two (2) models include intuitive conceptualisation, with Barnard maintaining that when filtering alternatives, an individual may draw from how a past goal was achieved. In image theory, intuition is instinctive and requires minimal cognitive processing. It may be as simple as choosing one alternative just because it feels right at the time. The second difference relates to the screening of alternatives to arrive at one for which a choice will be made to act or not. Screening of alternatives in the image theory ends up with a few compatible alternatives, which will subsequently be tested (for profitability) before making the final choice. Novicevic, Clayton and Williams (2011) maintain that the image theory certainly bears out the thought processes of Barnard’s decision-making model.

The two (2) models’ position that decision-makers will make a decision that aligns with both their individual and societal views resonates with Pietsch's (2016a) assertion that humans possess a high level of cognitive ability to recognise when their actions will impact negatively on others’ utility and are favourably disposed towards co-operation. This is paramount for this study as it seeks to frame the understanding of WCM to improve corporate performance.

Performance-based remuneration may incentivise managers to achieve set targets. However, it is uncertain that they would consider the societal impact of their decisions with equal zeal unless, of course, this was part of the performance targets. Certainly, managers would consider prevailing factors, both endogenous and exogenous, in line with the Barnard model, as evidenced in risk-adjusted decisions such as sales forecasts.

The conceptual framework shown in Figure 2.2 was derived from the above discussion, where each concept has been filtered through the literature. The concepts ranged from the accounting concept of WC, liquidity, and profitability as dual goals of WCM to the decision-making process. A conceptual framework comprises concepts and anticipated interrelationships that the researcher deems useful to address the research questions (Lester, 2005).

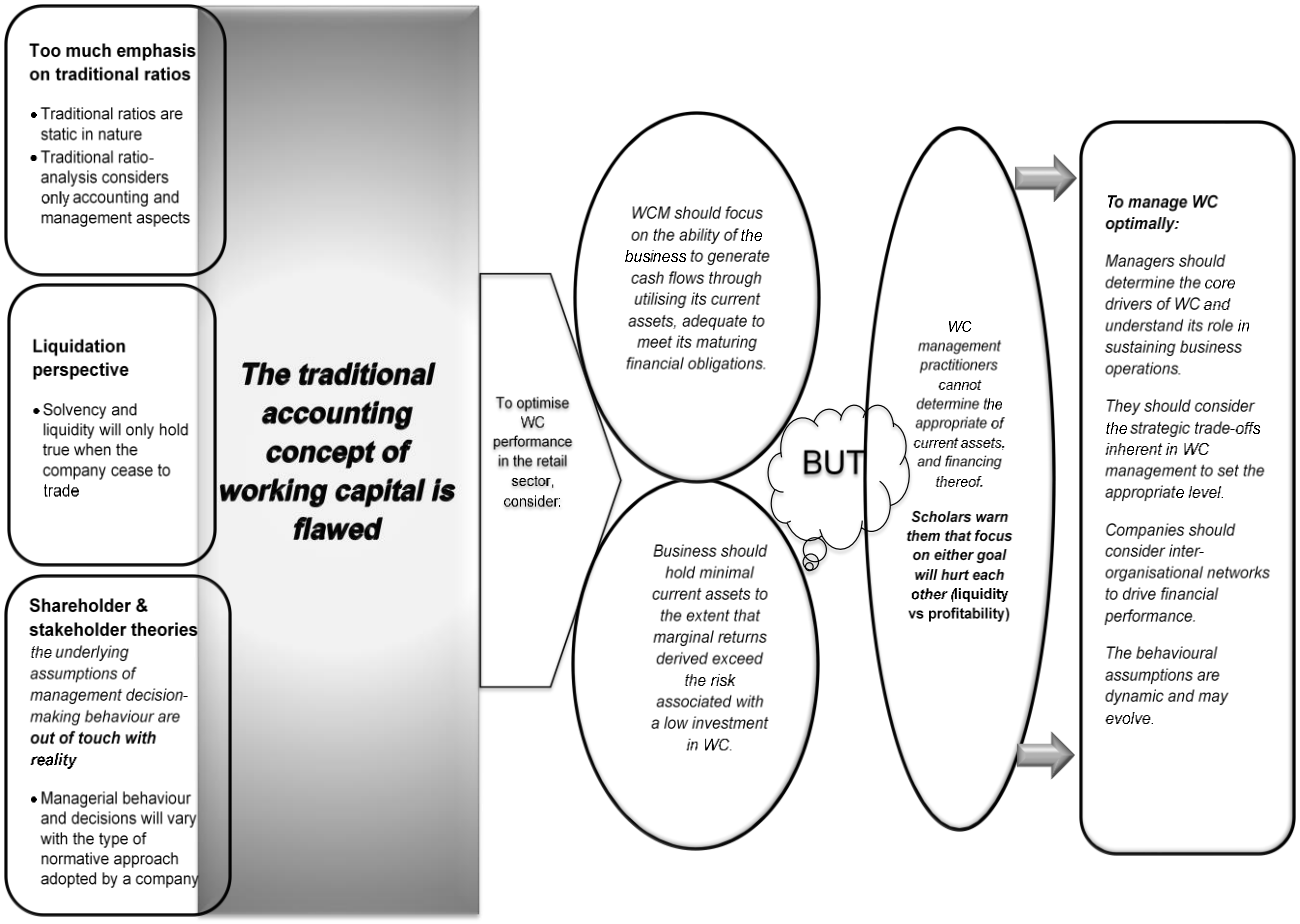

Figure 2.2: Initial Conceptual Framework

The above framework employs the traditional accounting concept of WC and shareholder and stakeholder theories in providing orientation and guidance for this

study. As the traditional ratios and liquidation perspective render WC an inadequate metric to evaluate financial performance, this road map depicts the generation of cash flows and holding minimal WC level as landmarks to guide the search for optimal WC performance. This would, however, require managers to determine the business drivers and consider inherent trade-offs in determining the optimal level of WC performance.

The researcher uses the framework carefully as a road map in the research and not necessarily as a prescribed path to consider emerging concepts and relationships to explain the phenomenon of WC.

2.9 CHAPTER SUMMARY

This chapter discussed the traditional accounting concept of WC to define the phenomenon of WC and to focus WC performance on achieving liquidity and profitability. The factors involved in the inherent limitations of the accounting view of WC were discussed to illuminate the research problem. The notion that the WC measure indicates the financial strength of a business is misleading since it does not guarantee that a company will have the cash required to meet its maturing financial obligations.

Hill (2013) maintains that solvency and liquidity will only hold true when the company ceases to trade. This flows from the presumption that the company will liquidate its current assets to settle all current liabilities. However, there is consensus among scholars that the focus should not be on the liquidation value of assets but rather on the operating cash flows generated by those assets. The rationale is that businesses should hold adequate and readily available cash to pay for goods and services.

Yet, for long-term survival, a company should derive profit and create value for its shareholders. Considering this, the need to hold an optimum level of WC to achieve the trade-off between the dual goals of WCM, namely, liquidity and profitability, was discussed, although a note of caution was sounded that focusing on one goal only would hurt the other. WCM policies were discussed to provide context for the dual goals, and it was suggested that the optimum level of WC lies between the two (2) extremes of aggressive and conservative WC policies. Businesses should hold

minimal current assets to the extent that marginal returns derived exceed the risk associated with low investment in WC, as advised by Correia *et al.* (2019).

The in-depth exploration of the two (2) dominant theories that underlie the philosophy of corporate management marked the theoretical relevance of this research. The discussion of the agency theory gave expression to the shareholder primacy or shareholder wealth maximisation objective. The researcher presented literature highlighting the premise of the agency theory, its dominance in corporate law as well as its benefits and shortcomings, to provide a guiding framework for the management of WC. Stakeholder theory, which seeks to detract from shareholder primacy, was also discussed.

The assertion that managers will always be motivated by self-interest and act opportunistically is too narrow, simplistic, and unrealistic to explain human behaviour, however (Fehr and Schmidt, 1999). Studies in sociology and psychology have found that a wide range of human motives drive behaviour and shown that managers consider multiple values when making decisions (Rausch, 2010a). It would be too simplistic for this study to frame the understanding of management decision-making behaviour primarily through these two (2) predominant theories' underlying assumptions since behaviour is dynamic and may evolve.

The next step was to explore factors that influence managerial decision-making behaviour. The reality is that managers often make decisions in a complex environment filled with uncertainties. Research has shown that the social environment extensively influences the decision-making process at an individual level by providing a contextual framework and that an individual is more likely to make decisions in line with individual and societal views. The two (2) decision-making models − Barnard's model and image theory − contend that decision-making is motivated by the need to achieve a desired outcome or the individual's want, desire or need (Novicevic, Clayton and Williams, 2011).

The theoretical framework guiding this study was derived from discussions about the traditional accounting concept of WC and the two (2) dominant theories of corporate management − shareholder primacy and stakeholder management. It also discussed the processes and relationships to guide the research further.

The following chapter discusses various research investigations conducted into the management of WC to demonstrate the theoretical framework and justify the importance and potential contribution of this study.

CHAPTER 3: LITERATURE REVIEW

3.1 INTRODUCTION

In the previous chapter, the researcher discussed the theoretical underpinnings of working capital (WC) not only to firmly root the study in established theories but also to provide the rationale for the study. The theoretical framework also delimits the field so that the literature review focuses on elements thereto and shows a bigger picture but still aligns with the theoretical lenses declared in chapter 2.

Management of working capital has a cardinal effect on the financial health of a company, as seen in many global corporate failures (Smith, 1973). This can also be seen in the case of the South African national air carrier, South African Airways (SAA), which was 2019 placed under voluntary business rescue to salvage it following a decade of inability to generate cash internally (Wasserman and Cronje, 2019).

WC management involves decisions and actions financial managers take to determine the appropriate level of current assets and the financing thereof (Appuhami, 2008). This study seeks to develop a conceptual model to systematise management activities to optimise WC performance. It aims to guide in determining the business-wide factors that drive WC needs to enable the setting of the appropriate level of WC. Some researchers have criticised the dearth of literature on WC management despite its significant impact on the liquidity and profitability of a business (Bellouma, 2010; Ramiah, Zhao and Moosa, 2014).

This chapter explores and discusses extant literature to situate the study within the field of financial management and show how it will extend the existing research. The discussion focuses on what existing literature says about the concept of working capital, its measurement and the existing framework that guides management decisions and actions to improve business performance.

The layout of the chapter is as follows: Section 3.2 discusses the fact that the WC concept is inadequate to measure financial performance, followed by sections 3.3 Theory of WCM; 3.4 Releasing hidden reserves; 3.5 WCM/Profitability relationship; 3.6 Positive cash flows increase business value; 3.7 Is there a right level of WC? 3.8 The right level of WC; and finally, 3.9 Supply-chain management approach.

3.2 INADEQUATE MEASURE OF FINANCIAL PERFORMANCE

The deficiencies and inconsistencies present within the framework of the WC concept render it inadequate and flawed as a tool for measuring financial performance (Fess, 1966). The earlier focus was on whether the current assets could be recovered to settle the company's financial obligations in case of liquidation. However, the liquidation view evolved towards the ability of a business to generate enough funds from its operations to settle the maturing obligations (Fess, 1966).

The static nature of WC (its measure represents the level of current assets at a point in time) and the historic presentation make it difficult to assess the ability to adequately cover future periods (Fess, 1966). The fact that current assets are recorded at historic amounts means that the amount realised from their sale will not be adequate to meet due obligations due to price-level variances. Yet, investors and other financial information users normally adopt a forward-looking approach when evaluating a business, that is, the future growth prospects (Filbeck and Krueger, 2005).

Some components of WC are recorded at cost (prepayments), and inventory at the lower of cost or market value, while account receivables and cash are recorded at realisable value and current value, respectively – this can only diminish the value of WC analysis (Fess, 1966). He discussed the above inherent weaknesses and inconsistencies to demonstrate that the accounting concept of WC is flawed. Fess (1966) urged companies to create a funds statement (cash budget) and depict anticipated cash flows to enable long-term planning. Such a cashflow schedule would assist in determining the ability of the company to generate enough funds from its operations to meet maturing financial obligations.

Fess (1966) further suggested the re-classification of WC items to enhance the usefulness of WC as an adequate measure of financial performance. For instance, a category of 'cash resources' should be created that includes cash and near-cash items, separate from inventories. Short-term obligations must be categorised as current liabilities. According to Fess (1966), such a revised classification would facilitate effective WC analysis.

Shulman and Cox (1985) endorsed Fess's (1966) argument that the traditional measure of WC is inadequate. They disapproved of employing net working capital

(NWC) - current assets greater than current liabilities as the indicator of liquidity due to the varying degrees of liquidity in the components of WC. Consequently, they grouped WC components into financial (cash, investment in marketable securities and payable securities) and non-financial (accounts receivable, accounts payable) items, respectively. They derived the difference between financial current assets and liabilities and termed it the 'net liquidity balance' (NLB), and the non-financial items difference as working capital requirement (WCR). Shulman and Cox (1985) maintained that the NLB is superior to the traditional financial ratios (current and quick ratios) as liquidity indicators.

Later research works, including Hawawini, Viallet and Vora (1986) and Chiou, Cheng and Wu (2006), found the NLB effective in measuring liquidity (Appuhami, 2009). In his study of 82 Thailand-listed non-financial service companies, Appuhami (2009) investigated the relationship between corporate investments and liquidity measured by NLB and WCR. The investigation confirmed the sensitivity of corporate investments to liquidity by finding a significant positive relationship between investments and NLB; and a negative relationship with WCR. The effectiveness of NLB was recently proved in Bin, Chen and Tran's (2019) study that explored the determinants of WC.

These multiple investigations demonstrate the importance of assessing the ability of a business to generate positive operating cash flows when analysing WC performance. When a business experiences increased liquidity risk, there should be concerns about potential bankruptcy. These investigations support the aim of this study to assist retail companies with setting a balance between risk and efficiency.

A discussion follows Sagan's (1955) 'proposed theory of WCM' as he pursued the new focus, that is, assessing the ability of a company to generate cash internally (Prasad *et al.*, 2019).

3.3 A THEORY OF WORKING CAPITAL MANAGEMENT

The company treasurer must ensure that the business has enough funds to operate and invest any temporary surplus funds as profitably as possible to maintain liquidity (Sagan, 1955). He, therefore, explored the role and function of the money manager (treasurer) in managing the cash generated in the business operations. This

responsibility requires the money manager to keep a keen eye on cash flows and use a cash flow schedule (cash budget) to illuminate cash inflows and outflows.

The cash budget should incorporate all intended future operations, such as acquiring fixed assets, borrowings, or debt repayments (Sagan, 1955; Fess, 1966). The money manager needs to appreciate that the treasury role affects other WC functions and production activities within the business. As these activities affect the company's cash position, the treasury should familiarise themselves with product-line functions, including control of inventories, receivables, and account payables. These WC accounts should be constantly reviewed to assure that the potential of WC assets is being maximised to achieve liquidity and long-term business growth (Sagan, 1955).

The treasurer should therefore evaluate operating cash needs, constantly reviewing the individual levels of the components of WC to determine the return derived and whether discounts offered for early settlements of accounts receivable or taken on payables will advantage the business. Sagan (1955) cautioned that as the level of operating cash needs is influenced by the nature of business and its scope, the WC ratios will be of little help when there are no funds to settle an immediate payment. The treasury function is the key component of WCM, as all company-wide activities flow through its accounts (Sagan, 1955).

When there is no cash available to drive business operations, the NWC is certainly of less importance to the money manager, as demonstrated in the following section.

3.4 RELEASING HIDDEN RESERVES

In the 1980s, companies in complex process industries such as chemicals, drugs and metal were on the brink of financial ruin due to excessive WC levels (Meyersiek, 1981). Their financial woes were fuelled by high finance costs that included insurance, inventory losses, holding costs, obsolescence, and bad debts. Holding excessive WC levels is costly and inefficient due to the opportunity cost of funds tied up in the WC (Ek and Guerin, 2011). On the other hand, inadequate WC levels may alienate customers and suppliers as there will be no product available to sell and no cash resources to settle account payables.

Companies with excessive levels of WC may fail to exploit available profitable investment opportunities due to insufficient liquidity. The lack of internal funds could

force them to seek external financing, which Cleary (1999) and Boyle and Guthrie (2003) discourage due to associated high costs and uncertain capital markets. The liquidity crisis businesses suffered globally during the 2008 credit crunch as banks refused to grant finance demonstrates the adverse impact of holding excessive WC levels. Even during the Covid-19 pandemic, businesses failed to reduce high WC levels despite significant revenue decline in the face of flat customer demand (PwC, 2021).

The various measures that complex-process companies adopted to reduce current assets failed to free up the much-needed liquidity tied up in WC (Meyersiek, 1981). This was again witnessed during the 2008 credit crunch when several companies failed to reduce the pre-financial crisis excess working capital, resulting in declining profitability (Tsuruta, 2019). The global financial crisis pushed certain countries (Greece, Iceland, Italy, Ireland, Portugal, and Spain) into recession (Chang *et al.*, 2019). It is understood that such a situation (excessive WC levels) has the potential to aggravate a liquidity crisis and, consequently, the risk of bankruptcy.

The asset-reduction methods, ranging from organisational-wide solutions to system measures, failed to free up the much-needed liquidity tied up in WC. These did not provide managers with creative ideas and detailed information in effecting tighter WCM (Meyersiek, 1981). Meyersiek (1981) subsequently developed a creative alternative to reduce WC, which required the involvement of line managers (purchasing and production) to provide realistic reduction ideas. His approach included top management bringing in a 'bird's-eye view' and thereby effect sustainable improvements in the management of WC.

The following are key features of Meyersiek's (1981) WC reduction approach:

- Comprehensiveness – horizontally (considering all activities, right from purchase of raw materials through to finished products and receivables); vertically (both bottom-up and top-down creative ideas)
- Reduction units comprised four (4) to five (5) managers responsible for current assets.

The co-operation between line managers involved with current assets and top management with an overall view of the company brought about substantial and sustainable improvements in WCM in other companies (Meyersiek, 1981).

This alternative approach included a framework to guide the reduction units as follows:

- Identifying the main factors of influence
- Developing reduction ideas
- Initiating reduction areas
- Formally summarising results.

The approach might have effectively facilitated the development of WC reduction ideas and necessary actions, consensus on controversial ideas and obtained top management's commitment.

Meyersiek (1981) reported that early results from companies in chemicals, auto manufacturing, electronics and food industries that adopted reduction actions suggested a 20% reduction in inventory and accounts receivable, which yielded a 15% hike in after-tax profit. However, he cautioned that a decision to undertake such a project should be considered in depth as it required fundamental changes in organisational structures and operating procedures. It would require visible and effective top management participation to provide direction and motivation and resolve potential conflicts (Meyersiek, 1981).

Smid (2007) observed that performing global companies adopted an integrated WC improvement programme driven by top management and pervading every business sphere. The integrated approach facilitated deriving buy-in in the company and sustaining momentum. Their practices adopted an end-to-end approach beyond functional boundaries addressing all WC components in an integrated fashion. The WC reduction team was maintained consistently to maximise process understanding and knowledge throughout the programme. Smid (2007) suggested that companies should draw up a WC Charter that centres on the key role of WCM in creating business value.

The current asset reduction programme sought to release the 'hidden reserves' tied up unnecessarily in WC and provide companies with a ready source of cash to deal with the financial crisis. This might provide businesses with the ability and agility to

react in a dynamic environment characterised by uncertain changes in the macro-economic factors − including interest rates and input costs − and to exploit available investment opportunities. The retail industry is now finding it hard to manage increasing inventory as customer demand dipped during Covid-19 (PwC, 2021). The retailer Massmart lost R1.8 billion in sales revenue from the Covid-19 liquor sales bans (Mashego, 2022).

The asset reduction actions discussed above resulted in reduced WC and improved profitability, underscoring the notion that efficient WCM does increase profitability. However, attention should also be given to deficiencies such as failure to develop a cross-functional integrated improvement programme or change employee behaviour, employing a single company perspective, as these will result in inefficient WCM (Smid, 2007; Hofmann and Kotzab, 2010; Ek and Guerin, 2011).

It is for this reason that attention is now given to the relationship between WCM and profitability.

3.5 WORKING CAPITAL MANAGEMENT/PROFITABILITY RELATIONSHIP

There is extensive literature that explores the relationship between WC management and corporate performance (Tahir and Anuar, 2011). Such worldwide attention is evidenced by multiple research investigations, including studies (Shin and Soenen, 1998; Deloof, 2003; Filbeck and Krueger, 2005; Afrifa and Padachi, 2016). This fact has also been confirmed recently through a systematic literature review of all current research on WCM performed by Prasad *et al.* (2019). Many of the highly cited articles have reportedly examined the relationship between WCM and the profitability of various companies.

Deloof's (2003) article titled 'Does WCM Affect Profitability of Belgian Firms?' is the most cited paper, with 1,535 citations. In the second position, Shin and Soenen's (1998) 'Efficiency of WCM and Corporate Profitability' with 971 citations. Working with a sorted list of 75 research articles (updated June 2018), each with at least 50 citations, Prasad *et al.* (2019) found that 53 studies were cited more than 100 times and that the last study was published in 2015 with 98 citations. They noted that most studies occurred in the last two (2) decades and made a significant impact, as multiple citations

show. The reason for all this attention lies in the fact that WC drives business operations and should be managed properly to sustain the business (Appuhami, 2008).

Smith (1973) lamented the dearth of research into WCM despite the prevalent corporate failures, which he attributed to financial managers' lack of understanding of WC. Bellouma (2010) objected to the focus on capital structure, capital budgeting, investment, and financing rather than determining drivers of WC to help corporates improve management thereof. As current assets constitute more than 50% of total assets, it is not clear why academics have ignored WCM, according to Ramiah, Zhao and Moosa (2014).

Smith (1973) set guidelines to assist financial management practitioners in managing WC well. He declared that liquidity and profitability are both central goals of the finance function, which should be balanced against each other by considering the inherent trade-offs. These goals are dynamic in nature as they reflect cash inflows and outflows over a period (Smith, 1973). It was suggested that practitioners should perform monthly dual forecasts using a sales forecast schedule and corresponding WC levels. Forecast cash schedules were previously suggested by Sagan (1955) and Fess (1966) to depict anticipated cash flows as these would enable long-term planning.

Cash flow planning is essential to assist practitioners in planning for cash shortages, whether to reduce overheads, generate sales, or find new investment opportunities (PwC *et al.*, 2018). Smith (1973) believed that using forecast cash schedules would display a series of trade-offs between liquidity and profitability. When determining the appropriate mix between current assets and current liabilities, potential trade-offs are inherent in the management policies that govern WC. Smith (1973) maintained, though, that high borrowing costs would discourage companies from holding excessive levels of WC.

The discourse of maintaining an appropriate mix of the components of WC will be discussed in Section 3.7. A discussion of various study findings of the WCM/profitability relationship follows.

3.5.1 Findings: WCM/profitability relationship

The findings can be broadly categorised into two (2), namely, linear and significant negative or positive relationships; and non-linear (concave shape) relationships (Boțoc

and Anton, 2017). The groups are based on considerable research which found a linear negative relationship (Smith, 1973; Jose, Lancaster and Stevens, 1996; Shin and Soenen, 1998; Wang, 2002; Deloof, 2003; Filbeck and Krueger, 2005; Gill, Biger and Mathur, 2010; Tahir and Anuar, 2011; Afrifa and Padachi, 2016). However, recent studies discovered a concave relationship (Baños-Caballero, García-Teruel and Martínez-Solano, 2012; Kwenda and Holden, 2014; Afrifa and Padachi, 2016; Boțoc and Anton, 2017; Korent and Orsag, 2018; Oseifuah and Gyekye, 2018; Anton and Nucu, 2020).

At a low level of working capital, a business can increase sales by granting generous trade credit and offering discounts on early payments while holding increased inventories to significantly influence corporate profitability positively. However, any further increases in working capital beyond a certain point (the optimum level) will negatively affect profitability due to high costs (for example, holding costs and finance charges) associated with holding high WC levels (Baños-Caballero, García-Teruel and Martínez-Solano, 2014; Anton and Nucu, 2020) In short, WC increases profitability up to the optimum level, and thereafter starts to harm the profit, the ’non-linear relationship’ (Anton and Nucu, 2020).

The positive and negative trends, together with the optimal level, all create an inverted U-shaped relationship, the ’concave relationship’ (Anton and Nucu, 2020). The relationship orients financial managers to target the optimal level of WC to derive WCM efficiency. It was seen in financially distressed companies which adopted Meyersiek’s (1981) asset reduction programme that releasing the ’hidden reserves’ provides businesses with financial flexibility and maximises profitability. The shortened CCC increases internally generated cash flows, a relatively cheaper source of funds than costly external finance and enables businesses to invest in prevailing profitable opportunities (Boțoc and Anton, 2017).

In South Africa, JSE-listed companies were found to gravitate towards optimal WC levels through trade credit and current liabilities (Oseifuah and Gyekye, 2018). Investigations of the WCM/profitability relationship yielded the same ambivalent results as seen globally (Oseifuah and Gyekye, 2018). Some researchers found a linear relationship (Beaumont and Fletcher, 2009; Erasmus, 2010; Siame, 2012; Chirume, 2013; Ncube, 2013), yet Kwenda and Holden (2014) and Oseifuah and Gyekye (2018)

suggested that there is an optimal level of working capital that can maximise the company's profitability or value. In his study of 305 JSE-listed companies, Kwenda and Holden (2014) concluded that aligning WCM with the corporate strategy would increase cash flows and improve financial performance. This was previously found to be the case by Smid (2007), and Guerin (2011), who maintained that linking WCM with corporate strategy may derive synergies.

According to Anton and Nucu (2020), the following factors may explain the divergence seen in the results of the investigation of the WCM/profitability nexus:

- use of various metrics as a proxy for WC, including the CCC, NTC, or inventory turnover
- employing WC as a composite measure or individual components of WC in the studies
- the complex relationship between individual components of WC and corporate profitability.

Notwithstanding the mixed results, they confirm that WCM affects profitability, and, of course, profitable businesses will have more cash to invest in WC (Anton and Nucu, 2020). Considering the significant impact of WCM on the financial health of a business, the researcher now briefly considers various studies that have investigated the WCM/profitability nexus.

3.5.2 Investigations: WCM/profitability relationship

Using a Compustat sample of 58,985 company years covering 1975-1994, Shin and Soenen (1998) found a strong negative relationship between the company's net trade cycle (NTC) and profitability. The length of the NTC was used to assess WC performance. The NTC is equal to the cash conversion cycle (CCC), whereby accounts receivables, payables and inventory are all expressed as a percentage of sales. Owing to strong criticism of traditional financial ratios (current and quick ratios) as deficient cash flow metrics, Gitman (1974) introduced the cash conversion concept as a better measure of WC performance (Prasad *et al.*, 2019). Shin and Soenen (1998) concluded that a reasonably low level of NTC will increase shareholder value.

Deloof (2003) investigated 1,009 large Belgian non-financial companies from 1992-1996 and found a significant negative relationship between the CCC and operating

profit (gross operating income). The results implied managers might improve corporate profitability by reducing the number of days accounts receivable and inventories to a reasonable level. Line managers should reduce current assets rather than increase accounts payable as debt diminishes market value due to financing costs. The shorter cash cycle reduces the need for external finance and improves financial performance (Shin and Soenen, 1998). These findings resonate with Smith's (1980) call to maintain a balance between liquidity and profitability, the dual goals of WC.

Appuhami (2008) studied the relationship between WC and capital investment, using NLB and WCR (Shulman and Cox, 1985) model, which measures liquidity as a proxy for NWC. He selected 82 non-financial service companies listed on the stock exchange in Thailand, an emerging market with growth opportunities. The study found a significant positive relationship between corporate investments and NLB and a significant negative relationship between corporate investments and WCR. Appuhami (2008) believed that these results would guide financial managers in estimating appropriate levels of WC and thereby provide adequate liquidity to sustain day-to-day operations while undertaking corporate investments to increase business profitability. This would enable them to utilise internal funds and avoid costly external finance, as recommended by Cleary (1999) and Boyle and Guthrie (2003).

In line with Appuhami (2008) and Bellouma (2010), who investigated the impact of capital investment on WCM to determine their relationship. It is maintained that companies may be unable to invest in profitable investments due to a lack of internal funds, difficulty in accessing capital markets and high costs of external finance (Cleary, 1999; Boyle and Guthrie, 2003). Also, using NLB and WCR as components of WC, Bellouma (2010) studied a sample of 386 Tunisian Export SMEs from 2001 to 2008 to identify factors that influence WCM. Bellouma (2010) established that corporate investments increase company liquidity while diminishing the level of WC required. Bellouma's (2010) study supported the call to release funds locked in WC to exploit available growth opportunities and generate profit (Gundavelli, 2006).

Tahir (2011) reviewed extant literature to explore the relationship between WCM and corporate profitability for 2008-2010. Using a study carried out by Gill, Biger and Mathur (2010) on 88 manufacturing companies listed on the New York Stock Exchange over three (3) years, from 2005 to 2007, they found the following:

- There is a negative relationship between the period of accounts receivable and business profitability
- There is a negative relationship between inventory period and profitability
- There is a positive relationship between the cash conversion cycle (CCC) and corporate profitability
- There is no statistical significance between average days of accounts payable and corporate profitability
- Some studies found no statistical significance for size and financial assets, though, in others, size was positively correlated with profitability.

These results show that a generous trade credit policy will increase sales and profit (Deloof, 2003). This will need to be supported by prompt customer-payments to provide cash to purchase more inventories, as uncollected receivables could result in a severe liquidity situation, forcing a company to seek external financing, a costly option. Although high inventory levels protect the business against the risk of potential disruptions in production, it was concluded by Shin and Soenen (1998) and Deloof (2003) that reduced accounts receivable and inventories to a reasonable level would increase profitability, while decreased sales in turn, would result in low profitability. This confirms that reducing or shortening days' accounts receivable and inventories would improve profitability (Nazir and Afza, 2009).

Accounts payable may provide a relatively inexpensive and flexible form of finance through delayed payments. Extending the payment period could provide a company with additional cash to buy more inventories, resulting in increased sales and high profitability (Tahir and Anuar, 2011). Businesses are, therefore, more inclined to improve cash flow by adopting a strict accounts receivable collection policy while lengthening the time to pay suppliers (Mulford and Ely, 2003). It is, however, cautioned that such practice may lead to missing settlement discounts and/or damage relationships with suppliers. Reports show that larger businesses tend to pay late when times are tough (Hill, 2013). This is criticised as not only myopic but damaging to small suppliers and the economy as well. If larger companies do not pay promptly, smaller creditors may be forced into liquidation, thereby eliminating competition (Hofmann and Kotzab, 2010).

Companies will hold high levels of accounts payable relative to current assets, an aggressive WCM approach when experiencing financing deficits (Hill, Kelly and Highfield, 2010). These companies may be confronted with low internally generated funds, limited access to capital markets, and/or high financing costs. These policies are associated with higher returns and risk compared to conservative WC policies (Nazir and Afza, 2009). A company pursuing conservative WCM policies will increase its investment in current assets, improving liquidity at the expense of its profitability (Adam and Quansah, 2019). There will be less risk of inventory shortages, yet less expected return (Nazir and Afza, 2009). An in-depth comparison of WCM policies (WC investment and financing policies) was discussed in Chapter 2 (Theoretical Framework).

Previous research showed a negative relationship between profitability measures and the degree of aggressiveness of WC investment and financing policies. Investigating the impact of aggressive or conservative WCM policies on profitability – Nazir and Afza (2009) used panel data regression models to analyse annual financial data of 204 non-financial Pakistan companies listed on the Karachi Stock Exchange (KSA) during the period 1998-2005. They observed that investors rewarded companies with aggressive WCM policies; investors seemed to believe that companies with less equity and long-term debt would outperform others (Nazir and Afza, 2009).

A study of south-eastern European food companies which adopted an aggressive WCM approach showed that these companies had a higher market value (MV) than book value (Vuković and Jakšić, 2019). The authors conducted a study of 9883 companies during 2010-2014 and stressed the importance of generating internally positive cash flows to navigate market volatility, as companies with less debt were more profitable. Using data from publicly traded US companies during 1980-2006, Kelly and Stagliano (2018) found a positive relationship between efficient WCM (shorter CCC) and higher ROA. The declared that efficient use of current assets would enable managers to derive a higher ROA.

The 2008 credit crunch certainly wreaked the worst havoc in the global economy since the Great Depression, leading to several corporate collapses, including the Lehman Brothers, and leaving severely constrained credit in its wake. Ramiah, Zhao and Moosa (2014) investigated the behaviour of WC managers in Australia while navigating

through the global financial crisis. The 2009 survey discovered that managers, at least 51% of the respondents, adopted a conservative approach, tightened credit controls, and improved the forecasting and monitoring systems. The WC managers reduced inventory and offered greater cash settlement discounts to reduce CCC and thereby maintain liquidity. It became crucial to run accurate sales forecasting to improve WCM due to its volatile nature (Ramiah, Zhao and Moosa, 2014). Sales are considered volatile as they vary with seasonality and dynamic macro-economic factors, amongst other things.

Continuing with the effects of the credit crunch in 2008, Ncube (2013) observed in 254 non-financial JSE-listed companies that an increase in the length of a trading (operating) cycle would improve profitability during an economic recession more than during an economic boom. He urged companies to adopt a more generous trade credit policy during an economic recession to generate more sales.

Similarly, Oseifuah and Gyekye (2018) analysed non-financial JSE-listed companies before, during and after the 2008 financial crisis, from 2003 to 2012, to investigate the relationship between WCM and company value. The results showed a decrease in the pre-crisis level of the market capitalisation of R18,8bn to R16,3bn (crisis) and an upswing to R24,4bn after the crisis; pre-crisis CCC decreased from 28,4 to 12,5 days (crisis) and increased to 16,2 days (post-crisis). The authors concluded that the concave relationship between WCM and company value confirmed that an optimal WC level exists, at which point costs and benefits are balanced. They recommended that WC managers should not deviate from the optimal WC level lest they destroy value.

Adam and Quansah (2019) investigated the effects of WCM policies on shareholder value creation for six (6) manufacturing companies listed on the Ghana Stock Exchange from 2000 to 2013. The study focused on policies employed when investing in current assets and the financing thereof. The results showed that companies that followed moderate to conservative WCM policies created shareholder value in the long run (CCC negatively influences Tobin's Q and economic value added). They concluded that effective management of current assets and finance increases value.

Chinese companies maintained, on average high cash levels (high NLB) and relatively reduced accounts receivable and inventories (low WCR) during 2005–2014 to maximise value creation (Bin, Chen and Tran, 2019). The authors compared this

practice with US companies which, during the 1990–2006 period, had it differently, holding on average high levels of receivables and inventories over 1990-2006. They attributed Chinese companies' behaviour to hard lessons learned in the 1990s, stringent regulations, and/or limited financial markets. Bin, Chen and Tran (2019). concluded that WC determinants may differ between emerging economies and developed economies and even in emerging markets themselves.

Changes in the measures of WC over time and differences between industries suggest that its management may be subject to both endogenous and extraneous agents (Filbeck and Krueger, 2005). The appreciation of such factors may help managers to plan adequately for varying WC needs and thereby improve WCM. Filbeck and Krueger (2005) studied differences in WC measures across industries over time using CFO Survey WC annual efficiency measures from 1996-1999.

The CFO Working Survey rank public companies against peers using the following estimates:

- Cash Conversion Efficiency (CCE) – the ability to convert revenues into cash flow
- Days Working Capital (DWC) – the ability to finance day-to-day operations with vendor credit.

These measures indicate whether a company has adequate liquidity to maintain its daily operations. The study was possible as CFO magazine maintains company and industry values for days sales outstanding (A/R), days payables outstanding (A/P), inventory turnover and days purchases outstanding (Filbeck and Krueger, 2005). The study's findings showed significant differences in WC measures between industries over time, particularly for days of outstanding sales, though consistent within the industry. Also, they found that significant differences existed in individual company measures over time.

These findings imply that WCM varies over time and across industries, as recently seen in Chinese companies by Bin, Chen and Tran (2019). Changes in macroeconomic factors, such as interest rates and competition, could potentially affect WCM (Filbeck and Krueger, 2005). For instance, slow payments during a period with high-interest rates may result in high balances of outstanding accounts receivable,

payables, and cash accounts. With the Covid-19 pandemic, a PwC (2018) study showed that accounts receivable and payable days increased in the face of reduced revenue and uncertain demand. Delayed customer repayments meant that companies, in turn, slowed down creditor payments.

Previously, Nunn (1981) sought to determine why WC performance varied from business to business and why some product-lines required low WC yet others high levels. He had observed that product-line managers battled to determine optimum levels of inventory and accounts receivable to sustain their operations. Employing data from 1971-1974 and 1975-1978 from the Strategic Planning Institute's Profit Impact of Market Strategy, Nunn (1981) performed a study to analyse business drivers of product-line performance. The study involved the regression of WC/Sales (percentage of sales) on 19 independent variables, all above 95% significance level, and yielded the following observations:

- WC/Sales level is affected by production-related variables, for instance, increasing the % production capacity utilised will proportionally increase sales and derive economies of scale; capital-intensive businesses are incentivised to consistently maintain level production to cover the high fixed costs.
- As far as sales-related variables are concerned, WC is negatively related to media advertising expenditure as strong brand loyalty derives strong market competitiveness, allowing a business to reduce WC.
- In terms of competitive position, a strong market position affords businesses a strong bargaining power to negotiate favourable delivery schedules, thereby shifting inventory burden to suppliers.
- Regarding industry factors, businesses with significant exports/imports carry greater inventories in transit due to long supply pipelines, resulting in a positive relationship with WC/Sales.

Nunn (1981) concluded that these were major determinants of WC that underpin the performance differences among competitors both within the same industry and across industries. A clear understanding of these relationships will enable practitioners to determine the appropriate level of WC to sustain operations. Nunn's (1981) call underlies the aim of this study; to provide guidance to determine the underlying drivers of working capital and thereby improve overall financial performance.

WC performance deteriorated under the severe impact of Covid-19. As companies emerged from lockdown, they were advised to streamline operations and improve cash forecasting (PwC, 2021). Positive cash flows enable companies to sustain operations and undertake value-enhancing investment projects in the short run (Deloof, 2003; Ek and Guerin, 2011). The following section discusses the impact of internally generated cash flows on financial performance.

3.6 POSITIVE CASH FLOWS INCREASE BUSINESS VALUE

Investors consider the company's potential cash flows, that is, the business's ability to convert its capital assets into cash to meet mature obligations when performing corporate valuations (Lifland, 2011). When a company cannot generate positive cash flows from its operations, management is forced to seek external finance, a costly option that negatively impacts profitability. Shin and Soenen's (1998) comparative analysis of two (2) US giant retailers' (Wal-Mart & Kmart) performance in 1994 demonstrated that a long CCC would hurt profitability, as can be seen in the points listed below:

- Kmart posted returns on sales, assets, and equity of 0.87%, 1.74%, and 4.91%, respectively
- Wal-Mart had 3.25%, 10.1% and 24.9%
- Both Wal-Mart and Kmart had similar capital structures (31% debt financing)
- Wal-Mart had a CCC of 40 days
- Kmart had a CCC of 61 days.

Wal-Mart posted a higher profit than Kmart even though the two (2) companies had similar capital structures. The longer CCC in Kmart was considered the cause of the low-profit level relative to Walmart. Walmart had linked its business electronically to its suppliers and thereby shortened the CCC (Shin and Soenen, 1998). They maintained that with all else being equal, a long CCC would diminish profitability, so a trade-off should be maintained between liquidity and profitability. Smith (1980) warned that focusing on one (1) goal hurts the other; for instance, high liquidity leads to low profitability.

Many researchers found that profit improved as accounts receivable days and inventory were reduced (Shin and Soenen, 1998; Deloof, 2003; Afrifa and Padachi,

2016). This motivated Lifland (2011) to analyse the WC needs of companies over the period 2004-2009 and their subsequent reliance on external debt to finance these needs. He categorised companies (within the Chemical, Durables, Food, Health, and Oil gas industries) into four (4) groups, namely, least profitable through to most profitable. Lifland (2011) used data obtained from the CFO Magazine's Annual Working Capital Management Survey for 2010, which included the 1,000 largest public companies from 58 industries based in the US.

In the Chemicals and Health industries, there was, on average, an increase in current assets and liabilities turnover concomitant with a decrease in the cash flow required to fund WC needs. Furthermore, the new financial strength enabled the companies to re-direct the found funds to other areas, such as debt reduction or new available investment projects. The Durables, Food and Oil-Gas industries saw decreased asset turnover ratios and increased days of WC, thereby increasing their financial burden significantly. Lifland (2011) concluded that reducing the amount of cash tied up in the WC signals efficient WCM and would, over time, create a cash culture rather than focusing solely on the bottom line.

Several studies, including Cleary (1999), Boyle and Guthrie (2003), Appuhami (2009) and Bellouma (2010), have advocated for efficient WCM to improve cash flow and thereby create business value (increased NPV of cash flows*)*. However, Mulford and Ely (2003) argued that cash flows generated by aggressive WCM are not sustainable and do not form part of the fundamental business model. Businesses would, for instance, enforce strict collections, offer generous discounts to early settlement, factoring receivables and improve product quality to reduce disputes to improve accounts receivable turnover. They would employ just-in-time (JIT) procedures such as make-to-order or use of few reliable suppliers to manage inventory and lengthen the time to pay suppliers (Mulford and Ely, 2003)

Boisjoly (2009) investigated the dissenting view by looking at financial ratios associated with WC and capital investment processes for 50 companies that undertook aggressive WCM to improve cash flows. The companies were selected from the 2005 Fortune 500 from 1990-2004. The financial ratios included accounts receivable turnover, inventory turnover, accounts payable turnover, WC per share and cash flow per share. Boisjoly (2009) found the following:

- WC management policies and business reinvestment changed ratio distributions over time
- There accounts payable, WC per share and cash flow per share measures changed significantly during the investigation period
- Significant shifts in the shapes of the ratio distributions for the cash flow per share and investment ratios
- Management practices resulted in cash flow per share becoming more positively and WC less positively skewed during the study period.

Boisjoly's (2009) findings challenged Mulford and Ely's (2003) notion that cash flows generated through aggressive working capital management are transitory and unsustainable. Furthermore, these originated from a study that spanned 15 years and even investigated diverse industries.

The above research underscores the need to hold an optimal level of working capital and thereby derive adequate liquidity to sustain daily operations. Besides, holding high WC levels is concomitant with increased financial risk due to high finance costs and pronounced bankruptcy risk. Line managers should therefore reduce current assets rather than increase accounts payable as debt diminishes market value deficits (Hill, Kelly and Highfield, 2010). Reducing current assets will release the 'hidden reserves' (Appuhami, 2008). This call motivates the objective of this study to provide the basis for determining the optimal level of working capital.

Oseifuah and Gyekye (2018) urged companies to gravitate towards the optimal value of WC as deviation will diminish the value. Following suit, the discussion now turns to the insights of Ek and Guerin (2011) regarding the right level of WC.

3.7 IS THERE A RIGHT LEVEL OF WC?

Financial managers often battle to demonstrate the appropriate WC level for the business to board members, according to (Ek and Guerin, 2011). Armed with experience in leading several WC initiatives to attain optimisation in companies across a wide range of industries in Europe and the US, they argued that the inability to recognise drivers might make it hard to manage WC appropriately.

The ability to determine an efficient mix of the individual components of WC will assist in deriving the balance between 'risk and return,' that is, the trade-off between liquidity

and profitability, as suggested by Smith (1980) and Ek and Guerin (2011) who identified two (2) questions companies need to consider when seeking to optimise WC:

- is there a right level of working capital for their business?
- how do we determine this level?

Ek and Guerin (2011) advised that these questions require managers to consider the company strategy and trade-offs inherent in determining the appropriate levels of the individual WC components. Their assertion lends credence to the thesis of this study project that strategic alignment of WCM will derive efficient management. Ek and Guerin (2011) suggested that companies employ a structured method (Figure 3.1) that comprises three (3) phases; namely, determining the current level of performance; the 'could-be' (optimal level) and the 'should-be' level.

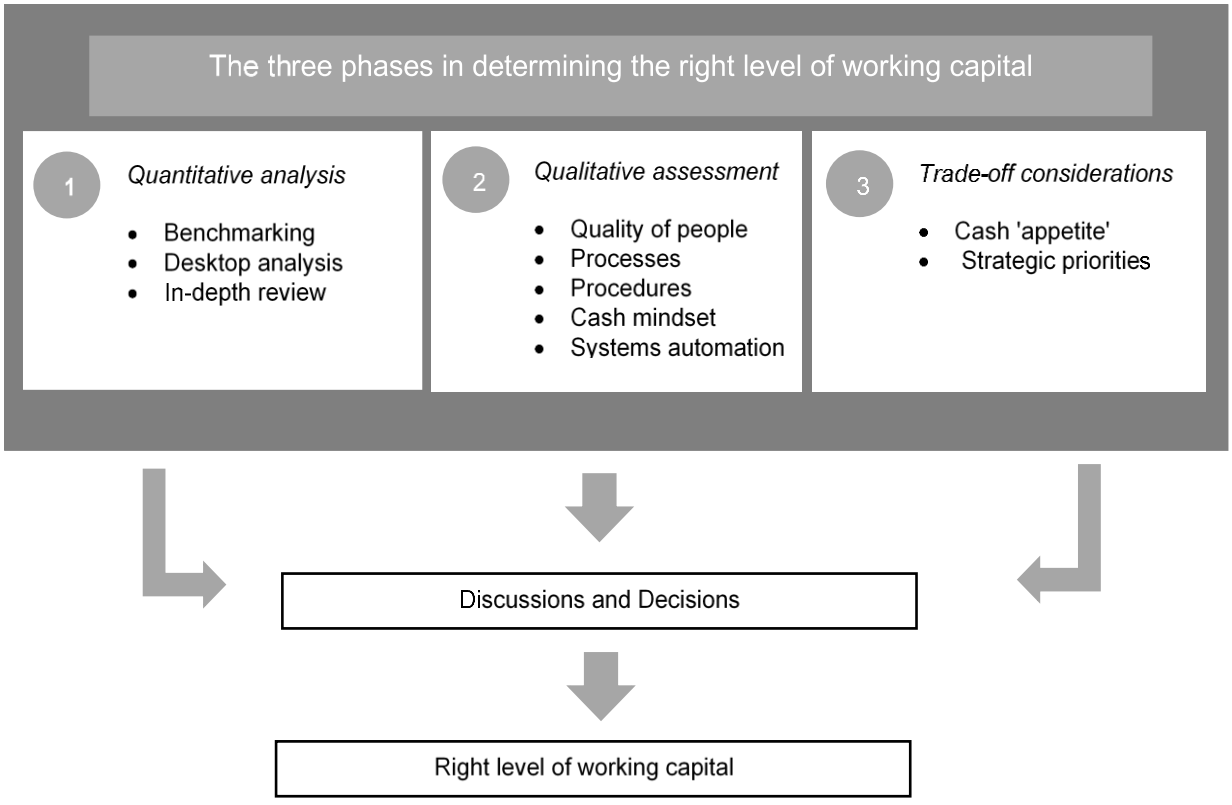

Figure 3.1: Phases in determining the right level of working capital

Source: (Ek and Guerin, 2011)

Each phase includes quantitative and qualitative assessments, which concurrently provide insights necessary for the third phase, trade-off considerations. These phases

focus discussions on the right level of performance, ways to achieve the level, and inherent trade-offs (Ek and Guerin, 2011).

3.7.1 Quantitative analysis

The following sub-sections provide a structured approach to determine the desired performance level.

3.7.1.1 Benchmarking

Ek and Guerin (2011) suggested that companies may determine the current level by comparing notes with peers in the industry that have similar WC characteristics. Benchmarking encourages discussions about the WC determinants, scope for improvement and what components should focus on in the next phase. It allows a company to determine the level of each component of WC and the trend in relation to that of the peer group. The data gathered will not, however, reflect performance over a period but only for one day, yet efficient WCM should be sustained over time.

3.7.1.2 Desktop analysis

The desktop analysis enables companies to drill down into individual components of the WC and thereby identify the following:

- the different parts of the business that influence current performance
- the opportunities and areas to focus on
- the factors that impede current performance.

3.7.1.3 In-depth review

An in-depth review enables businesses to estimate the 'could-be' level of performance, a first step towards establishing the right level. Achieving this level may require strategic and structural changes to the operating model. Ek and Guerin (2011) stated that they have often employed transactional analysis to determine the true picture of business performance over time rather than at month-end only.

3.7.2 Qualitative assessment

Ek and Guerin (2011) maintained that qualitative data provide insights into the decision-making behind WC performance. The qualitative dimension provides insights

into the factors that drive WC performance and those constraining WC. The assessment should be aimed at the following aspects:

- quality and skills of the people with respect to WC
- three (3) main WC processes (receivables, payables, inventory)
- policies and procedures
- cash mindset
- system landscape (automation and integration).

Assessing these factors and the extent to which they can change will − according to these authors − guide the determining of the appropriate level of WC.

3.7.2.1 Desktop review

Ek and Guerin (2011) have used interviews with key personnel and extensive on-line questionnaires to assess policy compliance and effectiveness of procedures. The objective is to evaluate WC fundamentals in the business (business-wide factors that impact WC).

3.7.2.2 In-depth review

Discussions and interviews are held with people (individuals and departmental managers/heads) involved in activities that influence WC to identify drivers and constraints of WC. Ek and Guerin (2011) believe such engagements have a great potential to solicit valuable information and buy-in from the respondents. They point out that these discussions point to where the level of performance should be and how to get there.

3.7.3 Trade-offs

The initiatives to improve WCM should be considered in light of associated trade-offs (Ek and Guerin, 2011). These trade-offs are made regarding various factors such as the geographic footprint, operational structure, or customer service. They categorised these trade-offs as tactical (allowing a major customer to pay late may set a precedent for extended credit) and strategic (acquiring a major contract may require granting extended payment terms; entering a new market will require WC investment). Tactical trade-offs are associated with short-term decisions, while strategic ones comprise

medium-to-long-term initiatives that often require structural changes in business operations.

It is critical that the initiatives to optimise WC should be embedded in the company to sustain the benefits derived (Ek and Guerin, 2011). World-class performing companies adopted an integrated WC improvement programme that permeated every business level to change behaviours and develop new competencies (Smid, 2007). The co-operation between top management and product-line managers brought about substantial and sustainable improvements in WCM (Meyersiek, 1981). It is believed that top management's involvement brought a long-term focus to the actions and decision-making associated with daily operations, thereby ensuring that internal business processes are coordinated with corporate strategy.

Ek and Guerin (2011) cited a case study involving a global health sciences multinational company that identified WC as a low-cost source of funds to finance their strategic objective of business growth. With the assistance of Deloitte's consulting arm, the company developed a structured WC improvement programme to derive sustainable benefits. Specific action plans with clearly defined performance improvement targets were developed with local management to obtain their buy-in. The project team working with local management teams, held regional workshops to transfer skills and share knowledge across all business levels. The team developed WC training and development programmes, including WC best practices.

The company managed to derive a 23% reduction in its WC in a year, which could be attributed to the fact that financial resources were geared to the activities that would achieve the company strategy. Company success requires that the decisions and behaviours of managers enable the company's internal business processes to align with the corporate strategy (Kaplan and Norton, 2004). Strategic alignment requires that organisational culture, leadership, and corporate governance align with the strategy (Hough *et al.*, 2010). For instance, the global health sciences company mentioned above maintained an optimum WC level such that it had the flexibility and cash to invest in opportunities.

Still, a strategic fit may not materialise if employees do not understand the strategic objectives and how to achieve them. Kaplan and Norton (2004) used an analogy to emphasise the importance of strategic alignment: a crew with rowers that row

powerfully but consistently with each other as directed by a coxswain will triumph in the race. The successful coxswain scans the environment, studies competition and, considering the strengths and weaknesses of his rowers, determines the best course of action, effectively coordinating the efforts of rowers to maximise their performance.

Managers can use a balanced scorecard (BSC) to link strategic objectives with their operating activities to achieve the company's vision (Kaplan and Norton, 2004). This would require that every sphere in the company develops departmental and individual objectives in line with the corporate strategy. A BSC was introduced to complement traditional financial performance measures with additional criteria that measure performance from three (3) additional perspectives, namely, customers, internal business processes, and learning and growth. These additional criteria will enable the linking of short-term activities such as WCM with corporate strategy, as financial measures do not evaluate progress in achieving strategic objectives, according to (Kaplan and Norton, 2004).

A scorecard requires that managers spell out (1) strategic objectives; (2) targets for all four (4) perspectives; (3) activities to achieve such targets; (4) allocate resources to the activities' and finally, appropriate performance measures for these targets (Kaplan and Norton, 2004). They emphasised that this process integrates strategic planning, resource allocation and budgeting. It has been observed that although companies initially adopted the BSC to improve their performance management systems (PMS), they now use it as part of a strategic management process.

The strategic alignment will not only enable WCM practitioners to appreciate business-wide factors that drive WC but orientate all decisions and actions taken towards achieving the company strategy. The researcher contends that appreciation of the underlying drivers of WC will enable the practitioners to understand the company's WC needs. Such understanding may facilitate the setting of the appropriate WC level for the business: being liquid in the short-term and profitable in the long run, the dual goals of WCM.

Companies, however, tend to employ a single-company perspective to improve company performance (Hofmann and Kotzab, 2010). These authors criticised alternative metrics such as CCC (Gentry, 1974), NTC, Shin and Soenen (1998) and NLB (Shulman and Cox, 1985), stating that these all ignore the potential benefits of

inter-organisational management. A discussion of the supply chain management approach they maintain will improve WC performance follows.

3.8 SUPPLY CHAIN MANAGEMENT APPROACH

As mentioned, businesses often implement aggressive payment terms and extend accounts payable to improve cash flows (Mulford *et al.*, 2004). This practice may have unintended effects, such as increasing the overall cost of goods, when not done collaboratively (Hofmann and Kotzab, 2010). In a supply chain, large and powerful companies can enforce aggressive payment terms on smaller players, which in turn do the same to even smaller ones – a domino effect. This situation, where powerful companies force their smaller counterparts to finance their WC, has no net benefits as the latter must increase their borrowing or perish (Hofmann and Kotzab, 2010). A supplier with cash problems and no access to affordable external short-term financing may be forced to delay purchases of raw materials or compromise on service or quality agreements to remain afloat.

The significant research aimed at improving the management of WC has focused on ratio analysis or cash conversion cycle (CCC) as the primary lever. These metrics fail to appreciate the potential benefits of recognising value networks and supply chains (Hofmann and Kotzab, 2010). They conducted a study to analyse the impact of payment terms on WCM for a single company and others from a supply-chain-oriented perspective. They considered both management accounting aspects and others unique to value networks and supply chains. The main findings of their study are as follows:

- Reducing the cash-to-cash cycle (C2C) for a single company causes harm to other supply chain members
- Synchronising goods/materials and financial flows within a supply chain increases value for all supply chain companies
- The C2C cycle can help track flows of goods/materials, payments, and payment periods within the supply chain
- The optimum C2C cycle minimises working capital while maximising cash received from all collaboration members

- Supply chain relationships are based on power and trust. Balanced use of power promotes, rather than hinders, the overall performance of the supply chain.

These findings support the notion that supply chain partners should collaborate to create value networks that will benefit all partners in the long term. In contrast to a single company perspective, where a C2C cycle is used to reduce cash tied up in the WC, the C2C cycle can be used to assess the impact of an entity's financial activities on its suppliers and customers (Hutchinson and Farris II, 2004). This view 'recognizes that the drivers of C2C cycle performance are more often operational in nature than financial' (Hofmann and Kotzab, 2010).

The network perspective may result in significant inter-organisational benefits in that it requires businesses to also consider their stakeholder relationships as determinants of working capital management. Such an approach may bring about efficiencies in the whole supply chain and address several deficiencies that cause inefficient WCM. The following causal factors were determined by researchers such as Smid (2007), Hofmann and Kotzab (2010) and Ek and Guerin (2011):

Measures to improve company performance have a single company perspective

- Failure to consider the corporate strategy when setting the right level of WC
- Failure to set the tolerant level for trade-offs inherent in managing WC
- Lack of top management buy-in
- Failure to develop an integrated programme that not only cuts across business functions but involves suppliers and customers
- Failure to change employees' behaviours from the top down.

Ceasing self-serving practices and aligning operations with suppliers and customers will enable companies to derive operational efficiency in the network and create value for all SC members through operational efficiency. Such collaboration will improve process efficiency and eliminate duplications, thereby reducing operating costs markedly (Hofmann and Kotzab, 2010). The objective of efficient WCM should necessarily flow from the corporate strategy and pervade every sphere of the company, cutting across functional lines. Such integration will help companies

overcome the above-mentioned deficiencies, as shown by global performing companies (Smid, 2007).

3.9 CHAPTER SUMMARY

The review of existing literature in this Chapter began with the discussion of the shift from the earlier focus on whether the business will be able to recover the current assets to settle its financial obligations in case of liquidation to the ability to generate enough cash flows from its daily operations to settle maturing financial obligations. It was concluded that net working capital (NWC) should not be employed as an indicator of liquidity due to the varying degrees of liquidity in the individual components of WC (Shulman and Cox, 1985).

Continuing with the then-new focus on cash-generating ability, Sagan (1955) defined the treasury's role in managing cash generated in business operations. Since the treasury function affects all WC and production functions, all cash inflows and outflows should be constantly monitored to achieve liquidity and long-term business growth. A cash flow schedule (cash budget) would assist the money manager (treasurer) in highlighting all business cash flows (Sagan, 1955).

A discussion followed on why holding excessive levels of WC is costly and inefficient. It is maintained that companies will be forced to seek external financing, a costly option, to fund the WC gap. They may even fail to exploit available profitable investment opportunities due to insufficient liquidity. In the same vein, though, inadequate WC levels may alienate customers and suppliers as there will be no product available to sell and no cash resources to settle account payables (Ek and Guerin, 2011).

Suggestions were made to release the 'hidden reserves' tied up unnecessarily in the WC to provide companies with a ready source of cash to deal with a financial crisis and the ability and agility to react in a dynamic environment characterised by uncertain changes in the macro-economic environment (Appuhami, 2008). Companies were urged to reduce current assets to a reasonable level and thereby increase profitability (Shin and Soenen, 1998).

The discussion progressed to several studies that explored the nexus between WC management and corporate performance, which yielded divergent results that ranged from a negative linear relationship to a positive linear relationship to a concave

relationship. The mixed results confirm the ’non-linear relationship*,’* and that WC has a positive effect on profitability up to the optimum level, whereafter, it starts to harm the profit (Anton and Nucu, 2020*).*

Management of WC involves determining the appropriate level of current assets to sustain daily operations and financing thereof. This would require managers to recognise business-wide drivers of WC needs to determine the efficient mix between the individual WC components. At the optimal level of WC, the company will derive a balance between ’risk and return,’ the trade-off between liquidity and profitability (Ek and Guerin, 2011).

Finally, there followed criticism that significant research aimed at improving the management of WC failed to recognise potential benefits lying in value networks and supply chains (Hofmann and Kotzab, 2010). Yet the network perspective may bring about efficiencies in the whole supply chain and address several deficiencies understood to cause inefficient WCM (Hofmann and Kotzab, 2010).

The above main points that flowed from the literature review clearly demonstrate the relevance of this study and support its problem statement, which briefly argued as follows:

> Every business requires cash to sustain its day-to-day operations and create long-term growth (Sagan, 1955). Cash is normally generated internally using current assets and only, when necessary, obtains external finance. The dual goals of WCM, liquidity and profitability, require a delicate balance, as focusing on one will hurt the other (Smith, 1973). However, managers often battle to determine the appropriate level of WC since they cannot recognise the underlying drivers of WC needs (Ek and Guerin, 2011).
>
> This problem requires setting up an optimum level of WC, which lies between risk and efficiency; that is, the risk of inability to meet mature short-term obligations on the one hand and avoiding excessive investment in current assets on the other hand (Filbeck and Krueger, 2005). At such a level, the business will generate adequate liquidity to sustain daily operations while obtaining profitability and therefore achieving the dual goals of WC.

This study aims to address the above-identified gaps by developing a conceptual model which shows how to manage WC efficiently and thereby answer the research question, namely, ’How could the management of working capital be systematised so that companies can manage WC well?’

The following chapter discusses the research structure and the procedures employed in gathering and analysing data to facilitate the development of the conceptual model, the intended goal of this study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

In the preceding chapters, the researcher explored and discussed existing literature to locate the study within the field of financial management. The discussion dealt with WC performance and measurement and the existing framework that guides management decisions and actions to improve business performance.

In this chapter, the layout is as follows: the research approach to this study and the research paradigm that informed it in section 4.3; its design and methodological preferences and the sampling for the design in section 4.4; data collection in section 4.5; data analysis in section 4.6*;* measures for ensuring trustworthiness in section 4.7; and ethical considerations in section 4.8 are all discussed before the chapter ends with the summary in section 4.9*.*

It is fitting that the researcher provides an identity memo to demonstrate his assumptions and beliefs about the world (Maxwell, 2005). The memo aptly precedes the discussions to demonstrate how the researcher's filters for the understanding of reality show reflexivity with the choice of the research process. The fit between the assumptions and the paradigm and process stances is crucial as the reflexive process bears quite significantly on the conclusions drawn from the study (Becker, 2007). Additionally, an identity memo constitutes an integral component of reflection, autonomy, and thoughtful scholarship that doctoral students should demonstrate in their studies.

4.2 RESEARCH IDENTITY MEMO

The journey of humans in life has, since time immemorial, been fuelled by an unquenchable thirst for an understanding of the outside world and the nature of reality. Our interaction with it and each other, the assumptions, beliefs, and experiences that we hold, all create a frame of reference to develop our understanding of the meaning of objects or things. These interactions enable us, as active participants in this world, to create personal constructs and thoughts about the nature of reality that continue to evolve with growth in individual understanding. The personal constructs are considered inherently dynamic and interpretive and therefore underscore the fluidity of meanings and actions (Charmaz, 2006).

People normally formulate meanings about objects or things in discussions or interactions with others as well as through their individual historical backgrounds (Creswell, 2018). It is in determining similarities and differences between what people know and learns about that they learn about the world and predict the future (Pyrko and Dorfler, 2018). For instance, some people explained the 2019 attacks on foreign nationals in the country as xenophobia, while others considered them acts of criminality, in line with their beliefs about them or the meanings they assigned.

Mapping these diverse thoughts could provide the nation with rich qualitative data that may be explored for possible insightful patterns, dynamics, inconsistencies, or missing links (Pyrko and Dorfler, 2018). The world exists, however, regardless of our personal constructs, perceptions and theories, and our understanding thereof only reflects our assumptions and experiential interaction with reality, as Maxwell (2005) observes. Maxwell (2005), therefore, views ontological and epistemological perspectives as representing human attempts to understand complex reality.

Philosophical stances are very influential in solving research problems as they represent fundamental assumptions about the nature of reality and knowledge of such reality. The assumptions are embodied in a research paradigm and enable scholars to discover new things (Willis, 2012). In my personal space, setting a consistent plan up-front provides a foundation and guiding framework that creates a structure to control my work in a disciplined fashion. However, considering the complex and dynamic environment that we live in, this plan should be flexible and agile enough to allow deviation when ruling conditions dictate.

It would not be easy to view what I do or think through a philosophical lens. I often must adapt to the situation at hand since the world does not align with our beliefs. Maxwell (2005) employed an analogy of a bricoleur to explain that our understanding of the world is not the objective perception of reality but our construction. The bricoleur creatively adapts his methods as the situation demands, using available tools and materials to resolve a problem. Bricolage, a French term that means ‘do-it-yourself’ (D-I-Y), describes a bricoleur as someone who makes do with whatever tools and materials are at their disposal.

To round off my personal journey, I offer some of my personal reflections as someone who is grounded in this research worldview, as outlined above. I am a 54-year-old man

with extensive experience in biomedical technology, accounting and audit-practice and academia. I had been working in a medical laboratory for 10 years when I quit to enrol for a degree in financial accounting full-time. Medical laboratory training largely involved laboratory experiments in physics and chemistry as a foundation for medical diagnostic tests. The highly systematic and methodological procedures I experienced in scientific training served as a springboard that facilitated the transition from the cause-and-effect worldview to contextual matters. This exposure extended my horizons and expanded my appreciation of the nature of reality, developing me as a person.

It was my MBA studies − undertaken while working at a provincial hospital in the Eastern Cape Province − that sparked my interest in accounting sciences, a social science. My business administration studies demonstrated how critical and invaluable human interrelationships are within the business. I began to appreciate human interactions and behaviours as these reflect peoples' assumptions, beliefs and understanding of reality. There is, however, no single understanding because people formulate and attach different meanings to the world (Willis, 2012). Although a single outside world exists, everyone's understanding thereof is unique (Morgan, 2007).

I contend that multiple perspectives are the cornerstone of organisational dynamics and should be harnessed to maximise business value. My journey, therefore, transcended two (2) different worldviews; namely, the positivist view that causes determine outcomes and measuring observations enable us to understand the world, and social constructivism, where understanding of participants' views of the phenomenon under investigation is paramount. The journey underscored the fluidity of meanings we attach to objects/things. Almost seamlessly, the two (2) worlds co-exist, intersect, and enable knowledge to move back and forth along the resultant continuum.

My major research goal was to design and develop a practical and effective intervention, a conceptual model to improve the management of WC in retail businesses. This study seeks to give insights into the phenomenon of WC and broaden the understanding of its role and underlying drivers, thereby extending the existing theory. It was important to determine an integrated methodology that would yield such a model. The choice of paradigm in this study was therefore led by the need to align with the researcher's assumptions and methodological preferences.

4.3 METHODOLOGY

Research design or methodology refers to the framework of the study; the way it is organised to conduct a research inquiry. It comprises all the aspects of the study, the design, procedures for data collection and data analysis (Willis, 2012). Such a guiding framework enables the researcher to plan and conduct the research to derive robust findings and achieve the study's purpose (Burns and Grove, 2007).

4.3.1 Qualitative research approach

A research approach comprises knowledge claims about the nature of reality and understanding thereof (paradigm and philosophical assumptions), strategies (specific procedures to be applied), and methods of research inquiry (data collection and data analysis). When choosing a research approach, one should consider the research problem, questions posed, researcher-experience and audience advice (Willis, 2012).

Management of WC is a behavioural process that involves considering alternate goals that individual managers want, desire, or need, as shaped by endogenous and/or exogenous factors (Novicevic, Clayton and Williams, 2011). Emotions, fear, or courage influence the decision whether to do something, and this process is more intuitive than rational. Multi-criteria analysis should be employed to evaluate alternate goals to determine the most desirable one (Srdjevic, Bajcetic and Srdjevic, 2012). Decision-making is context-specific, being a dynamic process determined by both the situation and the issue.

This leads to the question: ‘What then informs management’s decision regarding WCM policy?’ Cause-and-effect thinking cannot provide a comprehensive understanding of this social phenomenon; the perceptions, assumptions, and actions of the participants and the meanings they attach to it all come into play. Qualitative research, on the other hand, seeks to explore and understand the meaning that individuals or groups ascribe to a social or human problem (Creswell, 2018). Qualitative researchers regard humans as active agents in their lives and their worlds who create structures as they engage in processes of existence (Charmaz, 2006).

In qualitative research, data are recognised as perceptions and experiences of humans and discourses expressed in texts such as academic articles. Qualitative data can, therefore, provide rich insights into the activities of human participants and the

meaning that they attach to them (Guba and Lincoln, 1994). This approach enabled this study to explore the perceptions of product line managers, the meanings they attach to their business environment and the basis of their behaviour. It is this potential that motivated the researcher to adopt the qualitative research approach, based on the interpretivist-paradigm, to address these dimensions.

4.3.2 Research paradigm

Willis (2012) describes a paradigm as a system of shared beliefs, assumptions, or world views that guide research inquiries in a field. This aligns with Kuhn's (1996) concept of a paradigm that the worldviews and shared belief systems influence which questions to ask, and which methods are most appropriate to answer them (Morgan, 2007). Essentially, a paradigm comprises two (2) philosophical stances, namely, fundamental assumptions about the nature of reality (ontology - characteristics of existence) and knowledge of such reality (epistemology - how can we know things that exist).

Morgan (2007), however, criticised the examples of models that guide research in a speciality area as often silent on what to study and how to go about it. He emphasised the need to customise the methods employed to produce knowledge with the nature of the knowledge that researchers produce. Such properly integrated methodology, with emphasis on the connection between epistemological and technical concerns, would consequently enhance the belief system (Morgan, 2007).

4.3.2.1 Ontological and epistemological perspectives

Human behaviour is greatly influenced by their perceptions of the environment and the meaning that they attach to their reality (Willis, 2012). As social scientists seek to interpret human construction of the outside world, the *verstehen* (understanding) of their subjective perception of the environment is golden in social sciences research (Creswell, 2018). Interpretivists tend to favour qualitative research methods as these enable them to secure *verstehen* (Willis, 2012). The researcher assumes that knowledge may be derived from specific WC contextual sites and through researcher-inspired interpretations of texts and theories that relate to optimal WC.

Knowledge was created through situated reading of secondary references (academic articles representing the core unit of analysis: WC). The researcher inductively

selected seminal and evocative statements around WC aligned with the research objectives. The inductive, subjective readings of the articles were complemented by a deductive stance informed by the fundamental principles of WC, established through a long tradition of extant literature and the evolution of theories that frame WC. This back-and-forth shuttling between data and theory is termed ‘abduction’ (Morgan, 2007). Prior inductive results could be employed to predict future lines of action, thereby testing them. The mapping of these conceptual domains formed the first step towards the research contribution.

Research has shown that WC performance varies between and within industries over time due to industry - and company-specific factors (Filbeck and Krueger, 2005). Many companies reacted to the 2008 credit crisis by reducing WC by increasing the collection of sales and reducing inventory costs to yield positive cash flows. However, others increased WC balances to meet liquidity and solvency requirements set by financiers (Westerman, 2010). In deciding on the best course of action amid tough economic conditions, managers must draw heavily upon their assumptions, perceptions, and experience to survive the credit crisis.

The above divergent management actions underscore Strauss’ (1987) notion of fluid meanings and actions of participants when engaging with their reality (Charmaz, 2006). Importantly, individuals interpret the world in their own way (Morgan, 2007). The researcher selected interpretivism to guide this exploratory investigation of the concept of WC to bolster understanding and extend the theory of WCM. Its fundamental assumption of multiple realities, which vary from one context to the next, fits this study very well (Willis, 2012).

4.3.3 Design-based research (DBR)

The dawn of the 21st century ushered in practical research as the alternative mode of education research inquiry that could bridge the gap between research and practice (Anderson and Shattuck, 2012). DBR aims to build practical solutions to complex problems in educational practice and thereby create usable knowledge (Plomp and Nieveen, 2007). The dual focus of DBR is on building and developing design principles and creating knowledge about these stands to enhance both practice and research in educational contexts.

Design research seeks to design and develop an intervention to solve a complex practical problem where scant or no guidelines exist (Plomp and Nieveen, 2007). It involves an iterative approach that integrates the design and evaluation of the intervention and, finally, validation thereof (Ford, McNally and Ford, 2017). The multiple cycles of the design research process allow progressive intervention refinement to ensure effectiveness in addressing the practical problem (Scott, Wenderoth and Doherty, 2020).

The emphasis is that development should be carried out in collaboration with practitioners to ensure such intervention is practical and relevant. This research approach was, therefore, suitable to guide this study in developing a conceptual model to help corporate manage WC well and thereby improve financial performance. Its flexible approach allowed the researcher to identify and revise the features of the intervention that were inadequate to address the research problem.

Research has shown that business managers often battle to determine the appropriate level of WC since they cannot recognise the underlying drivers of WC needs (Ek and Guerin, 2011). This is further compounded by the dearth of research on WCM due to the major focus on financial resource management (Bellouma, 2010). The design-research approach guided this study to contribute to the theory of WC and its management in the following ways:

- Giving insights and broadening the understanding of the role and underlying drivers of WC
- Providing the basis for determining the underlying drivers of WC and thereby facilitating setting the optimal (most appropriate) level of WC
- Extending the theory of WC.

The data produced in the study will allow readers to understand and adjust both the context and the intervention to maximise WC value in their own settings. The researcher provided extensive contextual information to enable readers to draw relevant insights. This is in line with the focus of DBR to develop an effective intervention to either resolve a specific problem or improve local practice in general (Anderson and Shattuck, 2012).

4.3.3.1 Phases of a design-based research study

The design research approach comprises four (4) phases, namely, problem identification, design of a potential solution, evaluation, and reflection, as depicted in Figure 4.1. The four distinct phases are interconnected, as knowledge generated in each phase is used to improve the design and evaluation of the intervention.

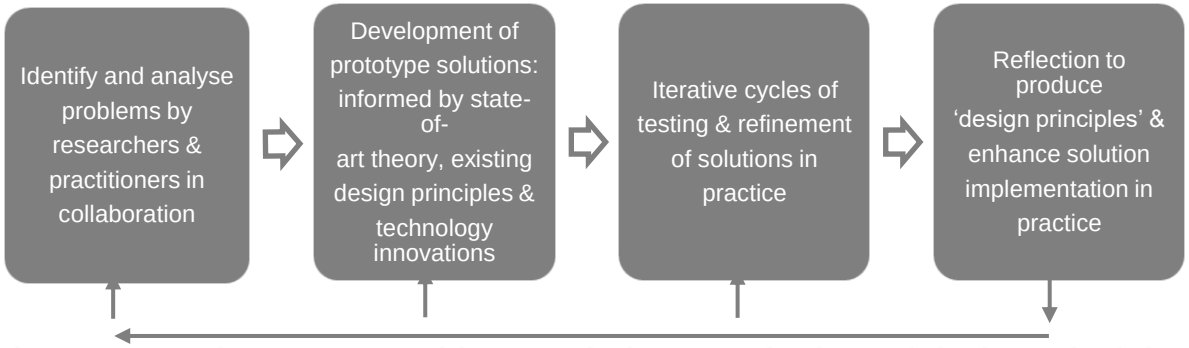

Figure 4.1: Refinement of problems, solutions, methods, and design principles

Source: (Plomp and Nieveen, 2007).

PHASE 1: Analysis of practical problems by researchers and practitioners in collaboration

It is important to identify and explore a significant educational problem to create a purpose for research and study focus (Herrington *et al.*, 2007). The problem statement should clearly state both the practical and scientific relevance of the study. Design research hinges on the input of practitioners in defining the problem area.

The College of Accounting Sciences (CAS*)* − Gauteng banking sector research partnership held regular discussions to lead research inquiries into practical problems that confronted the banking sector when reviewing the performance of its retail business clients. The discussions identified a disconnect between WCM and corporate strategic objectives. This gap has continued and impelled this research.

Herrington et al. (2007). concede that this may prove unfeasible for doctoral students at the exploration stage; however, they may still hold practitioner-discussions during the Ethical Review processes.

PHASE 2: Development of solutions informed by existing design principles and technological innovations

This phase involves the development of a practical solution to the identified problem using relevant literature and collaboration between researchers and practitioners. This requires a firm theoretical foundation to guide the design of an intervention. It is inherent in the design research approach that theory should inform the practical design guidelines and prove its worth to produce changes in the world (Barab and Squire, 2004).

After the discussions held with the Gauteng banking sector, the researcher conducted a critical analysis of extant literature and the theory of WC. Such analysis revealed that product line managers often find it difficult to set the appropriate level of WC. The research question later emerged: ’How could management of WC be systematised so that companies can manage it well?’

A conceptual framework (Figure 2.2) that employs the traditional accounting concept of WC and shareholder and stakeholder theories was created to orientate and guide the development of the conceptual model to systematise the management of WC. It was carefully used as a road map to consider emerging concepts and relationships in the research to explain the phenomenon of WC.

PHASE 3: Iterative cycles of testing and refinement of solutions in practice

After the intervention was designed and developed, the implementation and evaluation of the proposed solution in practice followed. This iterative design phase primarily involves formative evaluation aimed at improving and refining the proposed solution (Plomp and Nieveen, 2007). The DBR approach involves two (2) or more cycles of implementation and evaluation to improve the ability of the intervention to address the problem, aiming to improve rather than to prove.

As the researcher lacked familiarity with the complexities of business management culture, objectives, and politics, he teamed up with financial management teams from two (2) Johannesburg Stock Exchange (JSE) listed entities in the Gauteng Province through focus groups to develop the intervention. The practitioners evaluated the intervention (proposed model) to improve its ability to address the practical (research) problem. The practitioners’ suggestions were employed to refine the initial model.

There were, however, no field tests performed, and the practitioners evaluated the intervention's expected effectiveness (see 4.7.5.1 Practicality & effectiveness).

PHASE 4: Reflection to produce design principles and enhance solution implementation

Design research yields both knowledge and products, which distinguishes it from others, contend (Herrington *et al.*, 2007). They maintain that design principles embody substantive and procedural knowledge with specific procedures, results, and context. Such knowledge about the effectiveness of an intervention (design principles) may enable other readers to determine what insights are relevant to their own settings (Plomp and Nieveen, 2007). The cyclical and iterative nature of design research improves the quality of the intervention, thereby making it usable for practitioners. Throughout all these research activities, researchers carry out systematic reflection and produce documentation for scientific output, namely, the design principles (Plomp and Nieveen, 2007).

The design principles in this study were produced through a hybrid approach that involved relevant and commonly used WC constructs and practitioners' WCM experiences. Employing a systematic analysis technique, the researcher performed an iterative process of knowledge management to produce information in a meaningful way that answered research questions. The information, in the form of pervasive concepts and interrelationships, was then expressed in a graphic presentation, a conceptual model to guide and facilitate the decisions and actions of product line managers.

The four (4) phases from the design research approach were, however, adapted into two (2) major phases (1 and 2) bespoke to this study as data were collected through both concept-mapping and focus group interviews, effectively combining the development, testing and refinement of the proposed practical solution. ATLAS.ti, a Qualitative Data Analysis (QDA) software, facilitated and integrated the development of the theoretical foundation and design principles as an interconnected process. This research pathway enabled the exploration of the phenomenon under this investigation, its constituent concepts and their interrelationships, and its underlying processes.

4.3.4 Sample selection

The sampling of respondents normally occurs at the identification of the research problem and formative evaluation of the practical intervention in design-based research (Plomp and Nieveen, 2007). The research questions and the main purpose of the evaluation determine the type and the number of respondents, for instance, experts will be selected to appraise the relevance and effectiveness of the design in a specific discipline. Samples are purposively selected and relatively small, where respondents are chosen for a particular characteristic to provide information-rich comments (Plomp and Nieveen, 2007).

The researcher conducted focus groups to determine the extent to which the model could be accepted and its usability and to obtain suggestions on improving it, as suggested by Hennik (2014). Furthermore, formative evaluation is critical in the development process to determine how the intervention achieves the intended outcomes (Plomp and Nieveen, 2007). The WCM practitioners were therefore chosen to express their perceptions and impressions of the model and its usability as they answered the focus group questions.

The practitioners were members of WC management teams from two (2) JSE-listed companies: a retail chain store (four members); and a property developer (three members). They were all purposively selected since they were members of the financial management team and held decision-making authority over WC matters as Chief Financial Officer (CFO) and existing product-line managers, respectively (see section 4.5.2). The use of the property developer afforded the study triangulation and reduced uncertainty in data interpretation.

4.4 RESEARCH METHODS

Research methods comprise techniques to structure a study, procedures and steps used to gather and analyse data during a research inquiry (Burns and Grove, 2007). Morgan (2007) suggests that researchers should consider the methods to produce knowledge as they think about its nature, as such an integrated approach will strengthen the research paradigm.

As mentioned above, the study comprised the following two (2) major phases:

4.4.1 Phase 1

The researcher began with a review of relevant literature to produce a conceptual framework (Figure 2.2), which was constructed purely in terms of what scholars say about WC and its management. The idea was to illuminate the phenomenon and to allow data to be neatly organised in relation to other data. As Maxwell (2005) put it, one could not pick up rocks in a field if one did not know how to distinguish a rock from other things. Employing the ATLAS.ti software, the researcher collated constructs − the most relevant, significant, and commonly encountered ones across relevant studies − to shed light on WC.

The collated constructs were reconnected to create a representation of the account of the problem in a graphic format. Such visual representation depicts and communicates the research problem far more effectively than linear text (Ackermann, Eden and Cropper, 1992). The distinct concepts and their interrelationships were mapped together to create a conceptual model that guided the design of a practical solution (intervention) to the challenges experienced in managing WC (Balan *et al.*, 2016).

4.4.2 Phase 2

The second phase involved validating the initial model through focus groups comprising financial management practitioners – experts knowledgeable about the WC phenomenon, who then evaluated the proposed solution. The design research approach prescribes that when the intervention has been designed and developed, implementation and evaluation of the proposed solution in practice should follow to improve and refine the intervention (Plomp and Nieveen, 2007). The focus groups' data was interpreted against the initial model and employed to refine this version and finalise the model, which will be offered as the original and applied knowledge contribution of this study.

4.5 DATA COLLECTION

A research method should primarily be informed by the research question(s), asserts (Morgan, 2007). When thinking about the nature of knowledge to produce, researchers should also ponder the efforts to produce it. In this study, two (2) methods, namely, (1) concept mapping and (2) focus group discussions, were used to gather data. Researchers usually conduct a research inquiry to inform and convince people

(Creswell, 2018). This study's research findings will therefore be adjudged as trustworthy and accurate to the extent that they answer research questions and achieve the purpose of the study.

4.5.1 Method 1: Concept mapping

The researcher used concept mapping to identify the central root concept and its related concepts, define them, and discuss their interrelationships to enhance the understanding of working capital and management thereof. This conceptualisation exercise enhances the understanding and communication of working capital and its management (Pilkington and Pretorius, 2015). Using ATLAS.ti assisted the researcher in identifying research gaps in the theory, potential ways to plug these, and so develop the intervention.

ATLAS.ti provided the researcher with an exploratory and systematic approach to mining the existing literature for relevant and commonly encountered constructs framing the WC phenomenon. The data inquiry was largely driven by the researcher's interpretation of the literature, drawing from his technical knowledge and personal experience in line with Strauss' (1987) belief that personal experiences are a potential gold mine.

A concept map is a tool for organising and representing knowledge in the form of a diagram which depicts the relationships between concepts (Jankowska, 2014). It captures a person's understanding in whole or part of a knowledge domain at a time (Novak and Gowin, 1984). Concept-mapping was developed by Novak (1993), an American educator interested in learning, knowledge creation and representation, to assist students in learning meaningfully (Jankowska, 2014).

The map consists of concepts placed in ovals and linked with arrows (labelled lines) that represent interrelationships, which together express the understanding of the subject matter. The central or root concept gives the map's context, and examples are used to clarify the meaning of concepts (Simon, 2007). Novak (1993) contends that the visual presentation of knowledge enables the assessment of students' thought processes, the identification of knowledge-gaps or misconceptions, if any, and the development of interventions (Jankowska, 2014).

An example of a concept map is included below to show it as rendered for another study (Figure 4.2).

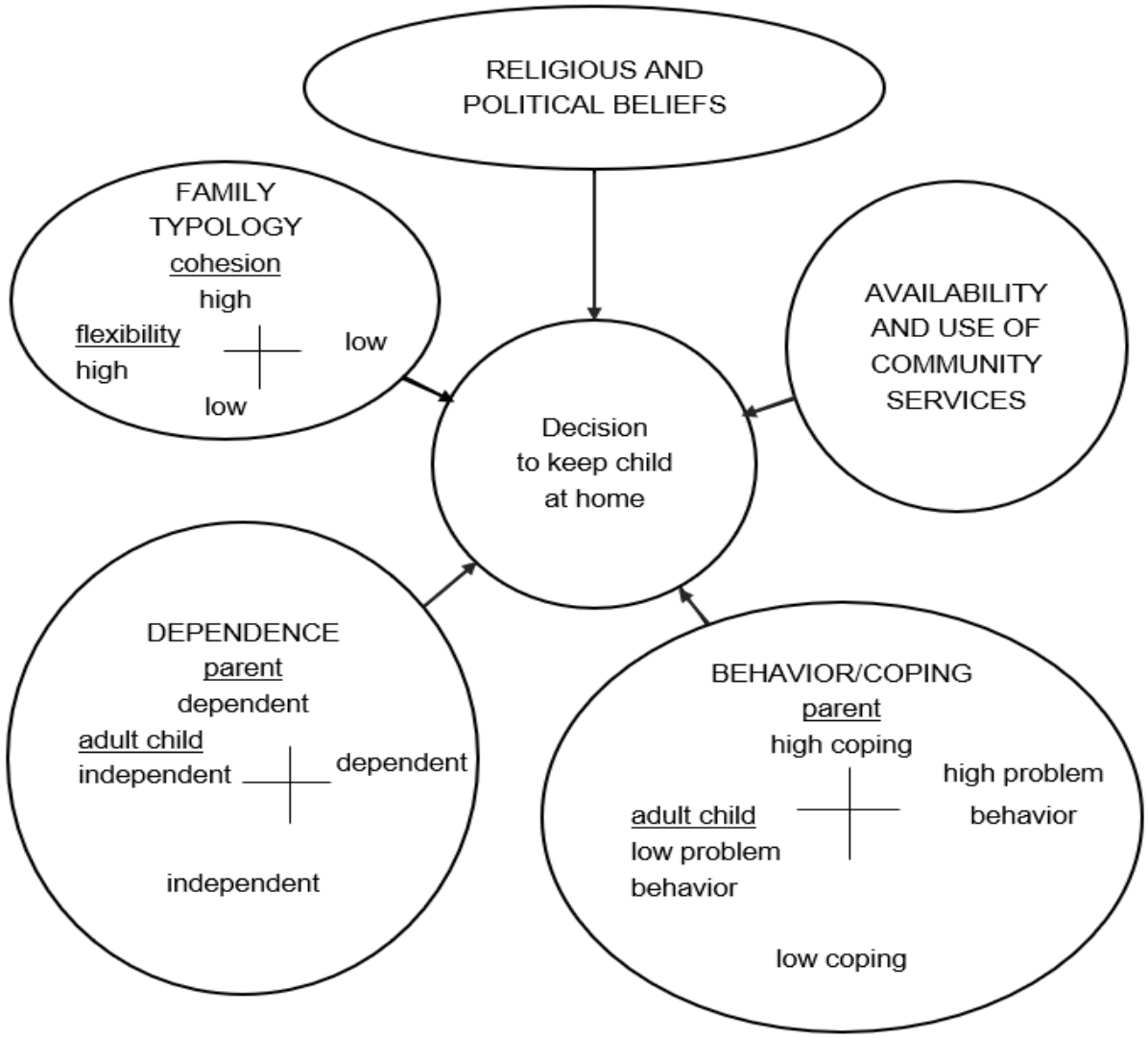

Figure 4.2: Factors affecting the decision to keep a dependent adult child at home

Source: (J. A. A. Maxwell, 2005)

For example, the above model shows that families with closed family systems (high cohesion; low flexibility) are likelier to keep a dependent adult child at home than random families who will more likely place the adult child at an institution (J. A. A. Maxwell, 2005). The visual representation allows us to understand the factors that influence such decisions, that is, to keep an adult-dependent child at home or place him/her in an institution.

The researcher extrapolated the learning from concept maps such as these and exploited the strengths of concept-mapping. These included: clarifying the meaning of concepts and expressing an understanding of the subject matter to frame the working capital phenomenon.

4.5.1.1 Central (root) concept

Critical analysis of *a priori* theory revealed that product-line managers battle managing WC well due to the inability to recognise its underlying drivers (Ek and Guerin, 2011). Aggravating the challenge is the paucity of WC research owing to the emphasis generally placed on capital structure, capital budgeting and investment (Bellouma, 2010). Fine tooth-combing of the relevant literature identified WC as the central concept that drives business. This is certainly underscored by Smid's (2007) assertion that it is capital that sustains operations; that is, buy, make, and sell.

4.5.1.2 Constituent concepts

The problem was broken into constituent elements to identify other important concepts related to working capital and thereby shed light on this phenomenon. The researcher conducted a coding process using ATLAS.ti software to break up data into data extracts relevant to the research questions. The software's knowledge management function enabled the extraction and grouping of similar data segments from various source documents (Friese, 2019).

Coding primarily involves highlighting or selecting and quoting relevant sections of data and subsequently defining those data attributes by a summary note (Archer, 2018). A quotation may be a word, sentence fragment or paragraph if it makes sense. Researchers advise that a quote, once created, should be used repetitively over other sections of similar data to facilitate qualitative data analysis. The researcher conducted the coding process until data saturation when no more new codes emerged. Saldaña (2016) maintains that there is no fixed data saturation level as the granularity of coding and the number of codes required for data analysis are a function of the nature of the study.

- Developing the initial model

Conceptual modelling can be described as identifying, analysing, and describing the fundamental concepts of a domain, including its constraints (Cipriani and Guarino,

2005). The aim is to give insights and thereby enhance the understanding of some phenomenon, the nature of reality. The researcher identified key concepts that constitute the phenomenon of WC, explained the interrelationships linking these and depicted them in a visual representation − a concept map. Such representation allowed the researcher to draw insights from the data and possibly develop theories from them (Balan, 2015).

The displayed propositions convey discernible meanings that readers can share and derive an enhanced understanding of working capital. This comprehensive model makes a novel contribution to attempts to systematise the management of WC. The coding process through ATLAS.ti enabled the researcher to systematise the rigour of the researcher-developed initial model. This model is rooted in the concept of WC, which was broken down into its constituent concepts.

4.5.2 Method 2: Conduct focus groups

Qualitative researchers often conduct informal group discussion(s) with a few individuals to obtain their perceptions, ideas, and thoughts about research topics. As these discussions are informal, participants feel safe sharing information (Onwuegbuzie *et al.*, 2009). This method is a qualitative participatory data collection tool that generates data from the statements made by the group participants.

The initial model was presented to two (2) groups of financial management practitioners from JSE-listed entities, a retail chain store and a turnkey residential property developer, respectively. The exploratory focus groups were organised to conduct a critical reflection on the model's effectiveness, testing its empirical applicability in managing WC optimally and its importance in terms of the consequences of application.

The aim of the focus group was not to reach a consensus among the participants but rather to determine the extent that the model could be accepted and to obtain suggestions as to how to refine it (Hennik, 2014). The practitioners were therefore encouraged to interact freely with each other and express their perceptions and impressions of the model as they answered the focus group questions. They were all purposively selected since they were members of the financial management team and

held decision-making authority over WC matters as Chief Financial Officer (CFO) and existing product-line managers, respectively.

The context of this study is steeped in the management of WC in the South African retail and consumer products industry sector due to its WC-intensive nature. The phenomenon of WC is context-dependent: WC performance varies between and within industries over time due to industry- and company- specific factors (Filbeck and Krueger, 2005).

All participants were provided with a copy of the initial model and group questions two (2) weeks beforehand (Appendix A, Focus Group Questions). Virtual interviews were conducted on the MS Teams platform for the chain store. The group discussions with the property developer team were conducted in a quiet and comfortable place in a Sandton office building away from the workplace to create a neutral, open, and friendly environment for the group members.

The focus group sessions were moderated by independent facilitators with enough knowledge of the phenomenon of investigation and requisite practitioner-expertise (Hennik, 2014). The facilitators were independent of both the study and the businesses of the group participants to avoid introducing any bias into the discussions. The sessions were opened with a short introduction that included welcoming participants, an overview of the research study and an outline of ground rules. Mention was also made of the reason for and nature of their participation in the study, and their right to withdraw at any time without giving reasons was emphasised. They were encouraged to share their viewpoints even if they differed from others and were assured of complete confidentiality (Krueger, 2002).

The sessions were audio recorded to capture all participants' comments, as the researcher could not take them down fast enough. The recordings allowed the researcher to read the data as often as required to obtain a comprehensive understanding. The researcher took notes to describe and reflect on the entire session, and the circle seating *(*MS Teams video function) allowed him the full sight of all group members. Notes were taken with consistency and clarity in preparation for subsequent analysis.

Attention was given to key phrases used by the participants to express a point of view and similar points made by several group members. The facilitator watched out for non-verbal cues such as gestures, body language and eye-contact between the participants or any other action that signalled agreement, support, or interest, as advised by Krueger (2002).

Open-ended questions were used to elicit powerful responses, and the questions ranged from general to specific. Communication techniques such as probing and paraphrasing were employed during data gathering to enrich such data. The facilitator probed for more information where the level of response was insufficient. He also paraphrased participants' responses to ascertain the meaning intended.

The following were the five (5) steps followed in the procedure and adapted Krueger's (2002) Focus Group Interviews method:

- Opening ('ice breaker')
- Introductory (to allow participants to reflect on their experiences with the topic to give us hints about their reality)
- Transition (setting the stage for 'Key' questions)
- Key (to drive the topic)
- Ending (questions to wrap up the discussions)

The conclusion comprised ending questions, summary questions, thanks, and dismissals. Krueger (2002) describes ending questions as 'All-Things Considered', which require each participant to reflect on previous comments and single out the most pressing matters that require action. This was followed by the summary question, where the moderator recapped the discussions and stated the major questions and ideas that emerged. The facilitator thanked the participants and closed the group session.

After data collection, the researcher conducted a process of analysis to organise, describe and evaluate the data in terms of the research questions.

4.6 DATA ANALYSIS

The study utilised Qualitative Data Analysis (QDA*)* to identify patterns of meaning or common themes in the underlying data that explained the phenomenon of WC and its

management. The technique of QDA lends itself well to interpretative philosophy as it examines the meaning and the symbolic content of qualitative data (Willis, 2012). Data analysis followed a Thematic Approach (TA) and adopted Braun and Clarke's (2012) Six-Phase Approach (Figure 4.3).

Figure 4.3 depicts the thematic approach as the process of disaggregating data into its essential elements, the codes, and subsequently re-linking similar or related codes into new categories called themes (Archer, 2018).

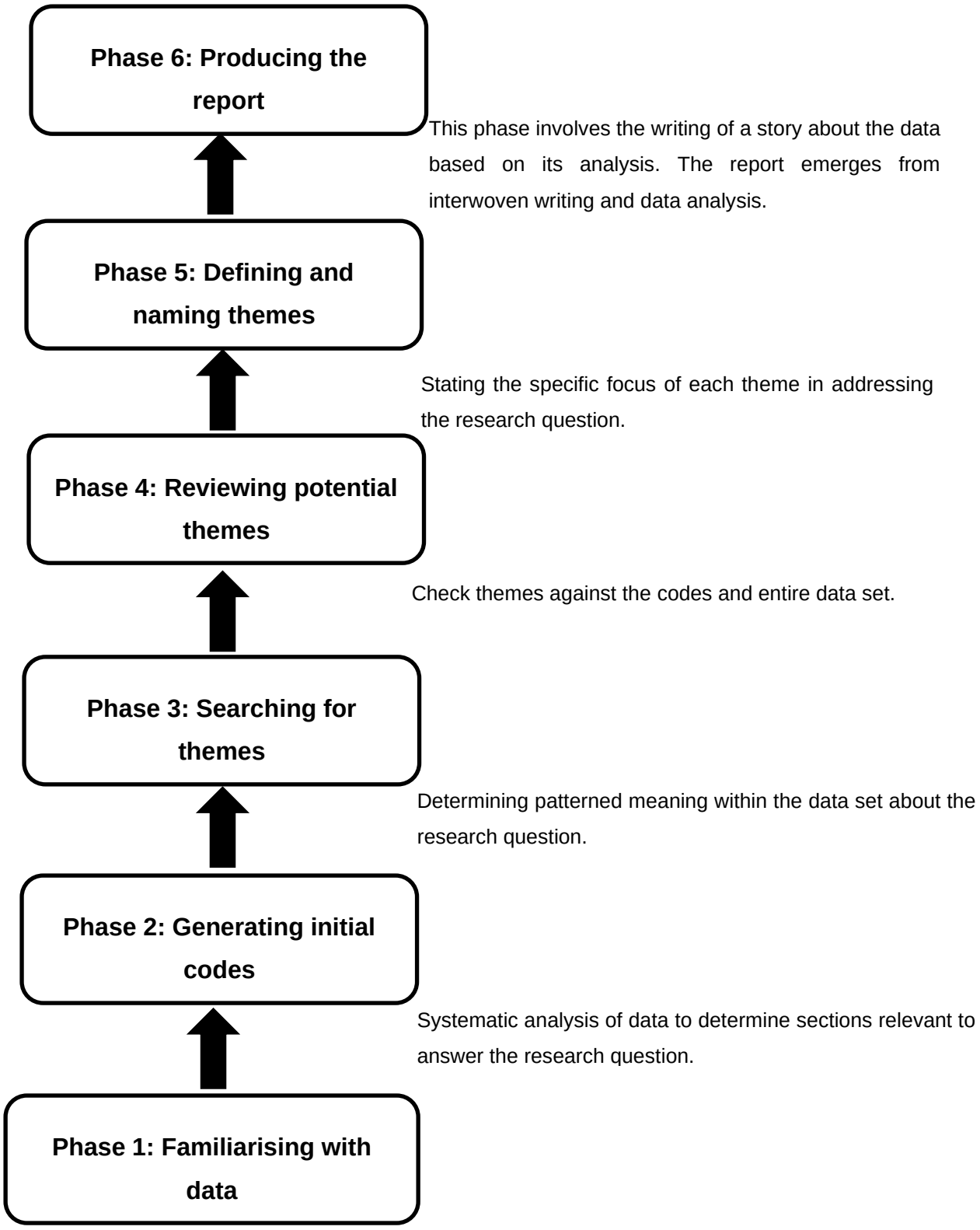

Figure 4.3: Thematic Approach

Source: *adapted from*(Braun and Clarke, 2012)

The thematic analysis enabled the researcher to capture shared meanings and experiences about WCM and what is discussed or written about it (Braun and Clarke, 2012). The strength of a thematic approach lies in its being a method of data analysis rather than a research approach, rendering it more accessible and flexible (Braun and Clarke, 2012).

This study followed a combination of inductive (data-driven) and deductive (theory-driven) approaches in actual design, data collection and data analysis. Such a hybrid approach is commonly used for qualitative inquiry (Onwuegbuzie and Leech, 2007). The researcher employed relevant and commonly used literature constructs to define the concepts of WC based on his technical knowledge and personal experience and derived codes and themes from the data based on practitioners' experiences.

Morgan (2007) describes this back-and-forth movement between induction and deduction as 'abduction', a variant of the pragmatic approach. Braun and Clarke (2012) maintain that researchers' backgrounds and perspectives have as much bearing on data analysis as the semantic content of data when coding, meaning that it is impossible to be purely objective and inductive. The analysis of practitioners' perceptions and impressions of the model from the exploratory focus groups can be adjudged as more inductive and experiential.

Similarly to data collection, the researcher broadly conducted data analysis in two (2) stages: the initial model; and validation by the focus groups. This decision took its cue from the design-based research approach principle that theory should inform the practical design guidelines; formative evaluation aimed at improving and refining the proposed solution (Plomp and Nieveen, 2007). The researcher strictly followed Braun and Clarke's (2012) Six-Phase approach in each phase.

4.6.1 Stage 1

The researcher began with the systematic analysis of the entire set of data to identify sections of texts that related to the research questions and labelled these with codes which described the content of the data (semantic) and progressed to the broader meanings of such data (interpretative) (Braun and Clarke, 2012).

Next, the codes were examined to determine similarities or interrelations and group them into meaningful units, the themes. The related data extracts were also collated

within the identified themes. These illuminated shared meanings and experiences across the underlying data, thereby enabling readers to obtain a better understanding of the phenomenon under investigation (Braun and Clarke, 2012).

The interrogation of each code that constituted a theme through close examination of related quotations − shown in the highlighted text − followed to determine what each theme represented and its meaning. This exercise helped the researcher to ascertain that all themes reflected the meanings evident in the coded data extracts, which amounted to a quality check.

Finally, the researcher identified concepts that permeated these themes and formulated research propositions (relationships between themes) which together formed the basis of the initial model, as they communicated what the data revealed about the research problem and questions (Braun and Clarke, 2012). Each theme was clearly defined by stating its focus, scope, and purpose. These were supported by related data extracts drawn from across the entire data set.

This knowledge management process was iterative and not linear as the researcher shuttled/switched between coding and thematic analysis to package and present the resultant information in a way that would assist readers as they engaged with the research data and their interpretation. Data gathering and analysis often run concurrently in qualitative research and not necessarily in distinctive steps (Creswell, 2018). This process was guided by the need to identify patterns of meaning in the data relevant to answering the research questions.

4.6.2 Stage 2

The initial model was presented to the focus groups as the basis for analysis of the rigour of the model. The focus group data were analysed as follows:

- Data from the focus group audio recording were transcribed carefully to clearly distinguish the moderator’s comments.
- The researcher listened to the recordings, reviewed field notes, and critically read the transcript, making notes on the entire data set.
- The focus group data were organised in a question-by-question format with amplifying quotes.

- Various coding forms were used to map concepts emerging from the focus group data.
- Attention was given to the participants' actual words and their meanings. The responses were evaluated regarding the preceding discussion, the tone of voice and strength of feeling. The researcher gave more weight to responses that were specific and which flowed from experience.
- Important findings were identified and verified by the moderator.
- Themes were constructed similarly to Stage 1.

The focus groups' data were interpreted against the initial model and employed to refine and finalise the model, which will be offered as an original contribution to knowledge and applied contexts. This exercise was in line with the design-based research approach prescripts that when designed and developed, the proposed solution should be implemented and evaluated in practice to improve and finetune the intervention (Plomp and Nieveen, 2007).

4.7 MEASURES FOR ENSURING TRUSTWORTHINESS

The researcher appreciated the need for the study to meet the rigorous research standards still and comply with the scientific research guidelines to derive valid and reliable design principles, despite the focus of design research on practical solutions. He followed procedures recommended by Guba and Lincoln (1994) as advocated by (Shenton, 2004). The following criteria were used to ensure trustworthy research findings: namely, credibility, transferability, dependability, and confirmability.

4.7.1 Credibility

In ensuring that the study findings were synchronous with reality, the study incorporated the following measures to reflect the phenomenon under investigation accurately.

4.7.1.1 Adoption of well-established research methods

The conceptual model was developed in collaboration with WCM practitioners from the JSE-listed entities. This collaborative partnership sought to build practical solutions to the complex problems experienced in setting the appropriate level of WC. The practical experience and expertise of the product-line managers were employed in the verification of the proposed model to manage WC. Research investigations conducted

on various DBR studies demonstrated the dual focus on theory building and effective practical interventions.

4.7.1.2 Explicit conceptual framework

The research problem was identified during collaborative research inquiry discussions with the banking industry. These were extended to an in-depth review of existing theory and *a priori* empirical research to collect the most relevant, significant, and commonly encountered constructs in framing the WC phenomenon. The researcher used other developed interventions; namely, Smid's (2007) Collaborative WC [inter-organisational perspective]'; Hofmann and Kotzab's (2010) 'Supply-chain oriented approach of working capital management' and Ek and Guerin (2011). question:" Is there a right level of WC?' to draw up a conceptual framework for this study.

*4.7.1.3 **Triangulation** (of data source, data type, method, evaluator, and theory)*

Data were collected through a review of extant research and theory and the use of focus groups comprising practitioners to illuminate the phenomenon of WC. The concerted use of differing methods compensated for their respective individual limitations while deriving synergies from individual strengths (Shenton, 2004). The validation of the initial model by practitioners drawing from their assumptions, perceptions and understanding of WCM enhanced the model's effectiveness.

The back-and-forth movement between inductive and deductive approaches improved the reliability and internal validity of the findings. These findings were underscored by full, context-rich descriptions to provide readers with adequate background when they engaged with the research data and their interpretation. These were also considered in relation to existing research findings to determine relevance and consistency.

4.7.1.4 Background, qualifications, and experience of the investigator and qualitative independent expert

The researcher provided comprehensive biographical information relevant to the phenomenon under study in the Research Identity Memo. This flows from appreciating the reality that the qualitative research approach considers him the 'major instrument of data collection and analysis' (Shenton, 2004).

The researcher also used an independent qualitative expert at the critical junctures of the research process. She has 14 years of experience as a qualitative methodologist and advises hundreds of students every year. The independent qualitative expert was highly stringent about the ethical line and ensured that she did not provide direct inputs into the original contribution of the research but rather guided the research process in a generic fashion. This included quality assurance of the conceptual framework, some of the unfolding chapters of the thesis as well as the final draft. Advisory comments were then analysed by the researcher for their pointedness to the research and discussed with the supervisor. The researcher then made the final call, in terms of tweaking areas, based on the comments given by the independent expert.

4.7.2 Transferability

Design-based research is context-bound in nature and does not strive to create context-free generalisations (Plomp and Nieveen, 2007). Its focus lies on replication logic, that is, multiple testing of design principles (intervention) to give the same results (Yin, 2003). The proposed model was subjected to practitioner appraisals in focus groups, and further cycles of implementation and evaluation are planned for post-doctoral studies to determine the actual effectiveness of the intervention.

Although the context of this study is steeped in the management of WC in the South African retail and consumer products industry sector due to its WC-intensive nature, analytical knowledge of the effectiveness of design principles captured in the conceptual model may certainly enable other readers to determine what insights are relevant to their own settings (Plomp and Nieveen, 2007). The researcher provided enough contextual information about WC and its management to facilitate such transfer, hence there is analytical transferability posited for this study.

4.7.3 Dependability

The research design should be covered comprehensively to enable readers to derive a thorough understanding of the study processes and their effectiveness. The researcher followed the guidance of the four (4) phases of design-based research (Plomp and Nieveen, 2007) and explained in detail the research design and its implementation, including a step-by-step discussion of data gathering and data

analysis. Another researcher should be able to repeat the work and arrive at the same results (Shenton, 2004).

4.7.4 Confirmability

The research findings should reflect the research participants' assumptions, perceptions, and experiences, not the researcher's views, to mitigate against bias (Shenton, 2004). Concept-mapping through coding of extant theory and *a priori* research employing the ATLAS.ti software programme, including thematic analysis of this data following Braun and Clarke's (2012) Six-Phase Approach, all display the pathway followed in gathering data, the processing thereof, and finally, the construction of recommendations. These procedures and decisions taken during the study create a sound data audit trail, which according to Shenton (2004), enables readers to determine the level of acceptability of data gathered and the constructs flowing therefrom. The independent qualitative expert was also a sounding board for the confirmability of the unfolding methodology and the emerging data.

Additional to the above criteria, to ensure that the study met the rigorous standards of scientific research, the researcher sought to meet generic criteria of validity and usability to develop a high-quality intervention by subjecting it to validation by financial management practitioners. The intervention is considered practical if it is easy for practitioners to use as intended and effective when it derives the desired outcome (Plomp and Nieveen, 2007).

4.7.5 Relevance

A systematic analysis of relevant literature was carried out to determine the most relevant, significant, and commonly encountered constructs to frame the phenomenon of WC. This exercise yielded a well-described theoretical foundation that guided the design of the intervention. The relevance criterion featured prominently at this preliminary research stage, where the emphasis was placed on analysing the research problem and determining its practical value (Plomp and Nieveen, 2007).

4.7.5.1 Practicality and effectiveness

It is a fair and reasonable expectation that the intervention can be used for its intended function, in other words, what it was designed and developed for. The research

problem was identified and analysed in collaboration with financial management practitioners. The initial model was subject to verification by focus groups that comprised well-experienced product-line managers with requisite skills. These target users evaluated the intervention to determine whether they could work with it practically) and were willing to apply it in their day-to-day activities, depending on its relevance and sustainability. It should be appreciated that formative evaluation intersperses all the phases and iterative cycles of design research (Plomp and Nieveen, 2007).

The researcher could only evaluate the expected effectiveness as no field test was conducted (this will be the focus of his post-doctoral studies). Plomp and Nieveen (2007) employed a curriculum study in Tanzania as an example to illustrate a situation where the effectiveness of the intervention cannot be demonstrated but is expected. The study investigated the use of micro-scale experimentation to improve the chemistry curriculum in Tanzania. The final prototype of the intervention was only evaluated by experts in the field of chemistry, and therefore more evaluation was necessary to report on actual effectiveness (Plomp and Nieveen, 2007).

Care was taken in the study to gather data ethically, respecting the rights, privacy, and dignity of all the research participants and the integrity of the institutions where the research occurred.

4.8 ETHICAL CONSIDERATIONS

The researcher employed the following ethical measures in research to protect the participants from any psychological and confidentiality risks:

4.8.1 Information participation sheet

On invitation to participate in the study, all participants were provided with a participant information sheet that explained the purpose of the study, including its benefits (Appendix B). The nature of participation in the study was clearly defined, and it was made clear that it would carry no negative consequences or personal harm.

4.8.2 Voluntary participation

The researcher emphasised to the participants that their participation in this study was voluntary and that they were not obligated to consent. Participants were free to withdraw at any time without giving a reason.

4.8.3 The informed consent

The participants consented to be involved in the study based on a thorough knowledge of the procedures and possible risks. Their consent was obtained through written and witnessed documentation from the participant.

4.8.4 Confidentiality and anonymity

Participants' identities and information were kept confidential and not recorded anywhere, including the study write-up. They will not be disclosed to anybody not linked with the study. Any information/documents that identified the participants were shredded. The researcher and the study leader signed a confidentiality agreement concerning the gathered data. Electronic information containing participants' answers will be stored on a password-protected computer. Future use of the stored data will be subject to a further research ethics review and approval if applicable.

4.8.5 Ethics approval

The Institutional Policy on Research Ethics requires research studies that involve humans directly in the field work activities to apply for research ethics clearance. This study was approved by the Research Ethics Review Committee of the College of Accounting Sciences, Unisa (Appendix C). This committee had no vested interest in the study but only appraised its research design for ethical issues.

The researcher first obtained permission from the two companies to conduct focus group interviews with their financial management teams. The companies were selected based on their capital-intensive nature and because practitioner experience would greatly benefit the study and improve its theory-building capacity. Consent forms were completed by all who volunteered to participate in the study.

4.9 CHAPTER SUMMARY

The researcher adopted a qualitative research approach when developing a conceptual model to systematise the management of WC. The fit between the paradigm choice and the research questions was explained by discussing ontological and epistemological perspectives. Management of WC is a behavioural phenomenon that reflects practitioner assumptions, perceptions, and experience of the business environment. Social scientists invest their time and effort to obtain the *verstehen* (understanding) of such personal constructs (perceptions of reality). The interpretivist paradigm was, therefore, fitting as it enabled the researcher to understand why the product-line managers would act in one way and not another; how they evaluate alternate goals to determine the desired one.

The design-based research process guided the development of a practical and effective intervention, the initial model. The process of design followed the design research approach's four (4) phases, namely: Refinement of Problems; Solutions; Methods; and Design Principles (Plomp and Nieveen, 2007). The phases were adapted into two (2) major phases (1 and 2) for the study, effectively combining the development of the proposed practical solution, its testing and refinement. Data were gathered using concept-mapping and focus group discussions. Concept-mapping was carried out by coding extant literature through ATLAS.ti software programme. This process yielded a visual representation of WC concepts linked together by their interrelationships.

The researcher employed a thematic analysis approach to organise, describe, and evaluate the data regarding the research questions. Data analysis comprised two (2) phases, namely, the initial model and its verification by the focus groups. The study shuttled between inductive and deductive approaches, moving back and forth between coding of WC constructs scattered in the literature and analysing the practitioners' perceptions and impressions of the initial model. This iterative process of knowledge management reflects the principles of design-based research, where theory guides the practical design and formative evaluation aims at improving and refining the proposed solution (Plomp and Nieveen, 2007).

An effort was taken to ensure that the study met the rigorous research standards and complied with the scientific research guidelines to derive valid and reliable design

principles that could be trusted, despite the focus of design research on practical solutions. Research activities followed the procedures recommended by Guba and Lincoln (1985), namely, credibility, transferability, dependability, and confirmability. Finally, this research inquiry was conducted ethically, respecting the rights, privacy, and dignity of all the research participants and the integrity of the institutions where the research occurred.

The research findings are presented, discussed, and analysed in the following chapter.

CHAPTER 5: RESEARCH FINDINGS

5.1 INTRODUCTION

In the previous chapter, there was a discussion of the rationale for adopting a qualitative research approach to develop the conceptual model for the optimal management of WC. It was explained that a design-based research approach guided the design and development of the intervention to ensure the practicality and relevance of the model (Anderson and Shattuck, 2012). This study adapted the design research four-phase development approach into two (2) major phases – developing the conceptual model (1) and validation of the model by the WCM practitioners (2), effectively combining the development of the proposed practical solution, its testing and refinement.

The purpose of this chapter is to present the following:

1. A summary of collected data
2. Discussion of the analysis of data
3. The interpretation of the findings in relation to the research questions

A brief overview of the research process, describing the process of collection and analysis of data, is first provided.

5.2 RESEARCH PROCESS OVERVIEW

In the practitioner-informed collaboration, a 'test' site for this study, it emerged from the discussions with the Gauteng banking sector that there was a disconnect between WCM and corporate strategy. This gap was taken up to impel this current study of WC in relation to corporate retail strategy. Subsequent critical analysis of the existing literature and theory of WC derived the overarching research question:

- How could the management of working capital (WC) be systematised so that companies can manage WC well?

This broad question was further expressed by the following sub-questions:

1. How can the underlying drivers of working capital be determined?
2. Is there a right level of working capital?
3. How can the working capital needs be balanced?

These research questions guided the research investigation that sought to guide how to recognise the underlying drivers of WC and thereby set the appropriate level of WC. This flowed from the previous research findings of Ek and Guerin (2011) that WCM practitioners often battle with determining the right level of WC since they cannot recognise the core drivers. This knowledge gap inspired this study.

The research methods employed included concept-mapping and focus groups to collect data. Concept mapping is a data-collection technique with benefits such as a clear audit trail including raw data, codes with data extracts and emerged themes, and determinable construct validity (codes of similar data extracts), which all enhanced the rigour of this research (Balan, 2015). Drawing on Novak's (1998) method, concept-mapping involved mining existing literature for relevant and commonly encountered constructs to frame the WC phenomenon.

The concept-mapping exercise yielded a visual output comprising an initial concept map of key WC concepts, explaining the relationships between them and the underlying processes. A working model for empirical exploration of the WC phenomenon in this study was subsequently developed (Figure 5.4) and validated by financial management practitioners in focus groups to determine the extent to which the model could be accepted and to suggest refinements. The focus group data were coded to map out emerging concepts in relation to the initial model.

The research process effectively followed the design-based research approach: the researcher identified the WCM gap in collaboration with the banking sector, developed the practical intervention by mapping the key WC concepts and explaining the underlying processes, and the WCM practitioners evaluated the effectiveness and the relevance of the solution. This process enabled the researcher to understand better the variables and processes underpinning the WC phenomenon (Herrington *et al.*, 2007).

The following activities demonstrated in Figure 5.1 allowed the researcher to derive meaning from existing literature by coding relevant and commonly encountered WC constructs.

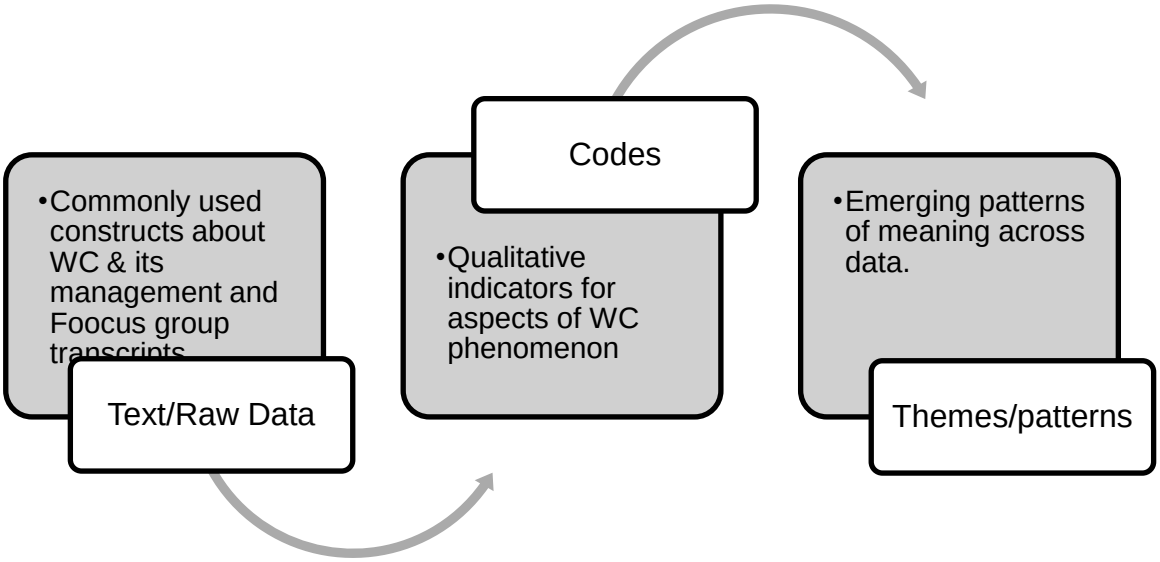

Figure 5.1: Qualitative Data Evaluation

Source: *adapted from* (Onwuegbuzie and Leech, 2007).

Data analysis included coding using the ATLAS.ti software and thematic analysis (*TA*) that brought about the refined conceptual model as the original contribution to the body of knowledge and practice. The researcher followed Braun and Clarke's (2012) six-phased method that depicts thematic analysis. It is worth emphasising that thematic analysis is an iterative and reflective process that involves constant back-and-forth movement between the phases (Nowell *et al.*, 2017).

Phases 1 (Familiarising with data) and 2 (Generating initial codes), respectively, were merged into the initial codes phase as these were not distinct but rather concurrent phases of the coding process. The analysis involved continued reading and re-reading of data throughout the coding process in an iterative fashion until all data were satisfactorily coded (Saldaña, 2016).

The chain mentioned above of analytic events from descriptive coding to creating themes is depicted in Figure 5.2 Abstraction: From coding to modelling (Morgan, 2018).

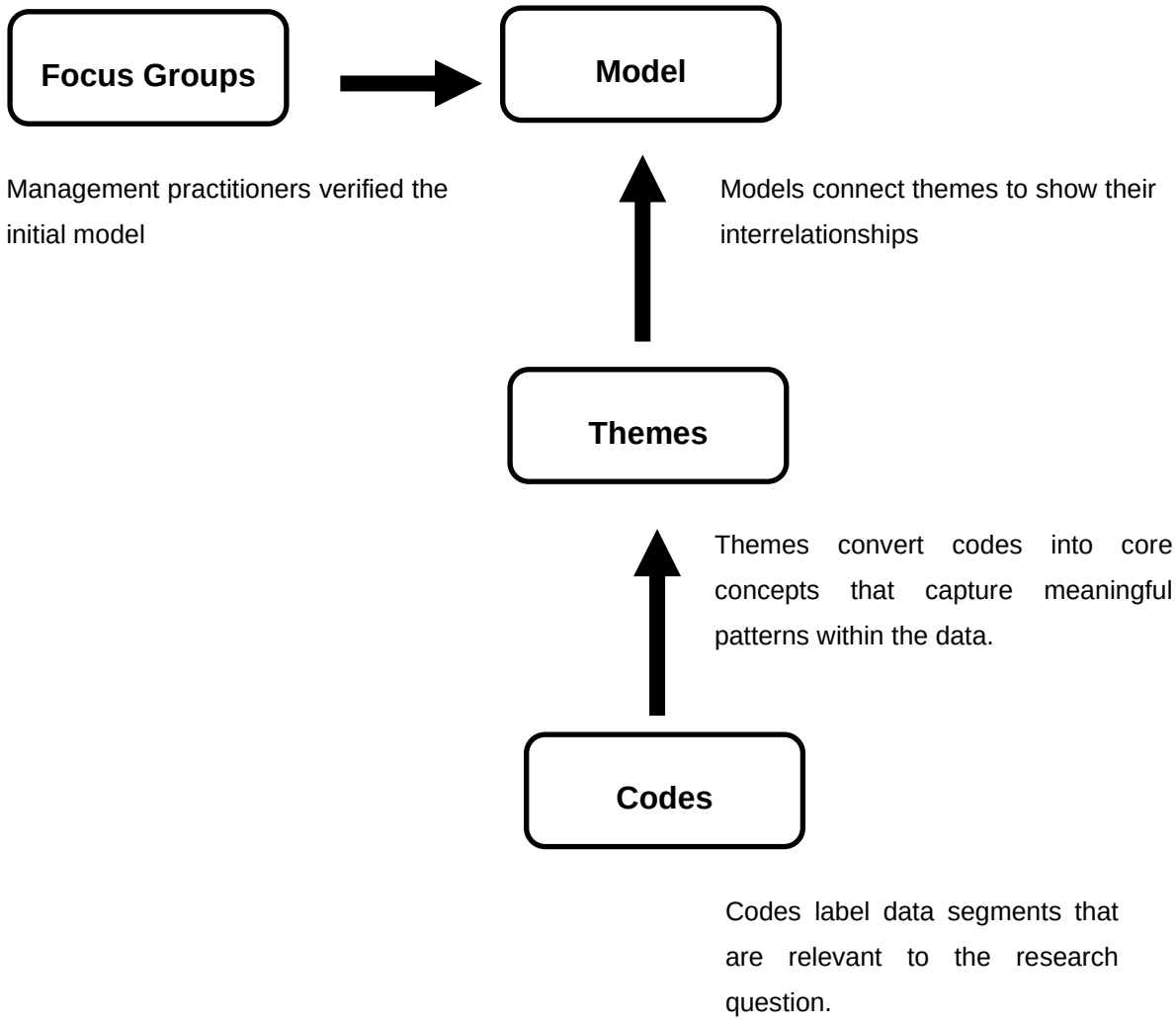

Figure 5.2: Abstraction: From Coding to Modelling

Source: *Adapted from* (Morgan, 2018)Morgan (2018)

Models represent a low level of abstraction and build into theories. The model enabled the researcher to depict the themes and their interrelationships more easily and effectively than describing these in words, thereby enhancing the understanding of the WC phenomenon.

Data analysis was carried out to identify appropriate and relevant data that substantiated the research purpose, and that contradicted it. The interpretation of the research findings, together with the work of other scholars, forms the basis of conclusions about the purpose of the study.

5.3 SUMMARY OF COLLECTED DATA

The research findings comprise themes and codes generated through concept mapping - mining existing literature for relevant and commonly encountered WC constructs; the initial model that depicts the themes and relationships between these, and finally, mapped concepts that emerged from the focus groups' data to verify the model (validation of the model is dealt with in the next chapter).

Codes are sections of texts that were objectively identified in the textual data from public domain sources as related to the research questions (research importance). These codes were grouped into meaningful units, the themes, based on similarities or interrelations. Table 5.2 and Figure 5.3 (Thematic map) present a summary of all the themes and constituent codes.

The related quotations (specific extracts) from the systematic analysis of extant literature can be found in the ATLAS.ti schedule (Appendix D) with all themes generated and representative data extracts illustrating each theme. The researcher worked with public domain sources and uploaded these records on ATLAS.ti.

Table 5.1: Themes and Codes Applied to (textual) Data

Themes	Finalised Codes
1. Collaborative working capital management	1.1 Aligning operations with key customers and suppliers will improve working capital [*4 Quotations*] 1.2 Information sharing increases net system benefits [*10 Quotations*] 1.3 Integration of financial and operational parts increases value in the supply chain [*8 Quotations]*
2. Determinants of working capital	2.1 Access to credit influences working capital management [*9 Quotations*] 2.2 Industry-type influences working capital management [*5 Quotations*] 2.3 Large market share derives working capital related economies of scale [*8 Quotations*] 2.4 Production-related variables influence working capital [*9 Quotations*] 2.5 Sales-related variables influence working capital [*8 Quotations*]

Themes	Finalised Codes
3. Optimal level of working capital	3.1 Holding high levels of working capital is costly [*10 Quotations*] 3.2 Reducing current assets to release hidden funds [*9 Quotations*] 3.3 Setting the right level of working capital [*13 Quotations*]
4. Trade-off: Liquidity-profitability relationship	4.1 Automating operating systems improve cash management [*9 Quotations*] 4.2 Cash forecasting improves cash flows [*13 Quotations*] 4.3 Decreasing DAR enhances cash flows [*6 Quotations]* 4.4 Increasing inventory turnover improves cash inflow [*2 Quotations*] 4.5 Shortening the cash conversion cycle (CCC) improves cash inflow [*2 Quotations*]

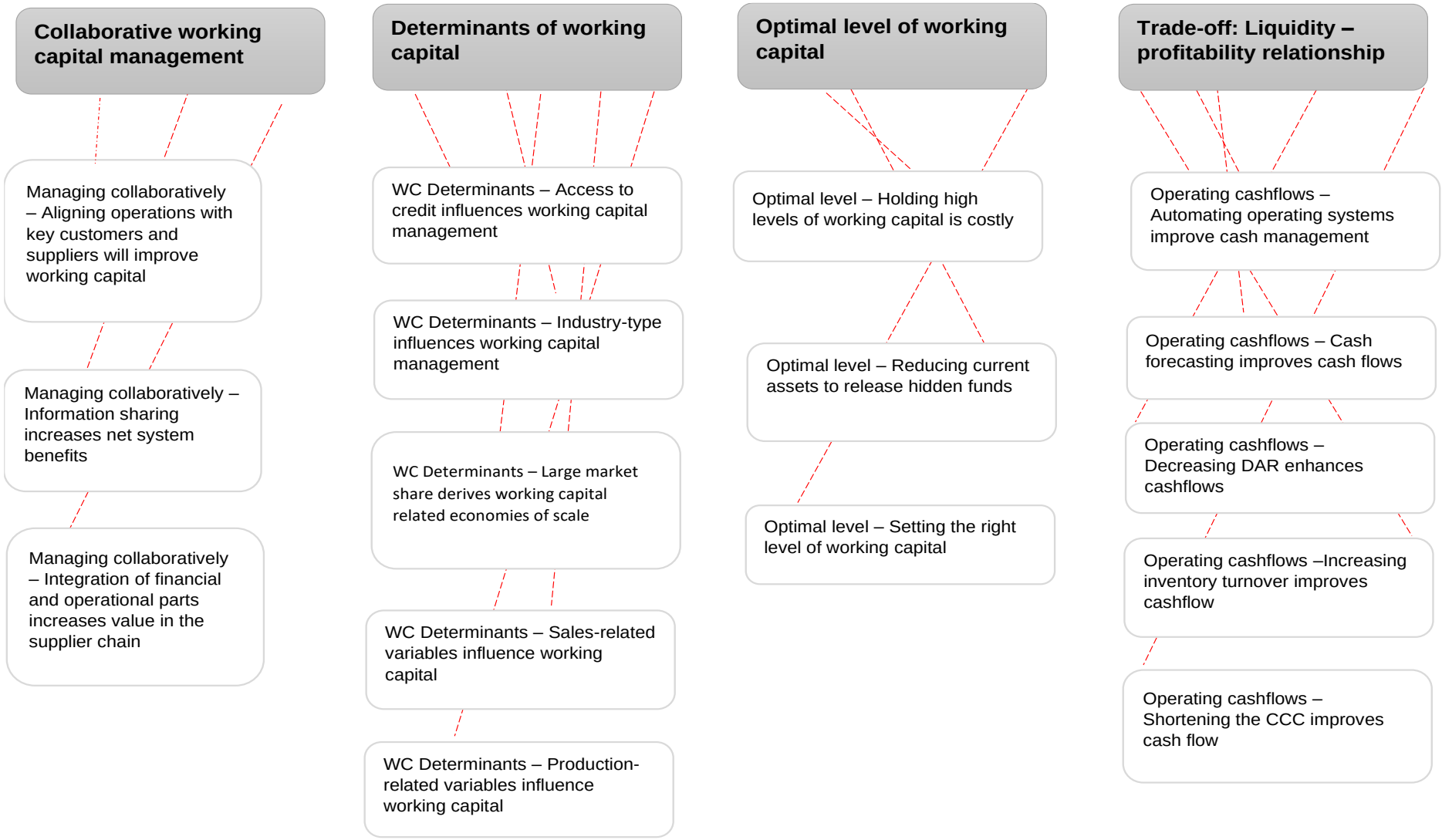

Figure 5.3: Thematic map from ATLAS.ti

The above map complements Table 5.2, illuminating the themes and relationships between the constituent codes. The visual presentation expresses meanings across the entire data set and enhances understanding of the WC phenomenon.

5.4 DISCUSSION OF THE ANALYSIS OF THE DATA

In a qualitative evaluation, the researcher seeks to derive a set of themes and a thematic map that captures patterned meanings in the data about the phenomenon of investigation. Simply put, these should tell a coherent story about the data in relation to the research problem and questions (Braun and Clarke, 2012). A quality check exercise involving close examination of coded data extracts helped the researcher to ascertain that all themes reflected the meanings evident in the coded data extracts.

Following the outline in Table 5.2, the themes are now defined.

5.4.1 Definition of themes

This includes a discussion of unique and specific aspects of data that each theme captures; how the themes address the research questions; and finally, how they are linked to the broader domain of financial management.

5.4.1.1 Theme 1: Collaborative working capital management

This theme captures inter-organisational networks that companies form to improve process efficiency and eliminate duplications, reducing operating costs significantly in the whole supply chain (SC). The network companies align and coordinate their operations with key suppliers and customers to create value through operational efficiency in the created extended/quasi-enterprise (Smid, 2007).

This shift to operational efficiency in reducing WC underscores Hofmann and Kotzab's (2010) assertion that WC drivers are more operational than financial. This is critical in addressing the research question concerning 'the determination of the underlying drivers of working capital.' The collaborative management approach is expedient for the research purpose of optimising WC management. It is driven by the recognition that companies are not immune to operational inefficiencies along the SC and that these ultimately get passed on to the customer.

The reality is that SC companies have interlinkages and are indeed vulnerable where internal processes intersect with those of suppliers and customers (Smid, 2007). To mitigate the disconnect challenges, collaborative practices focus on network optimisation to create value for all SC participants (Hofmann and Kotzab, 2010). However, some companies are wary of collaboration, discouraged by the prospect of a long-term relationship with potentially substantial switching costs.

It is understood that the concerns stem from the fear of losing their competitive advantage through operational coordination. Core competencies cannot be replicated, though, as these inherently distinguish a business from its competitors. Besides, companies do not switch suppliers for at least two (2) years, and by that time, the business will have realised the benefits of collaboration (Smid, 2007). SC members should share power and work on developing a high level of trust to cultivate effective relationships that focus on a win-win situation.

Employing the three (3) constituent codes of this theme (see Figure 5.3), its discourse demonstrates the need for collaborative management, discusses collaborative management practice and, finally, how this management approach can improve WC performance, the overarching goal of this study. Attention is now focused on the first high-level codes.

(1.) *Aligning operations with key customers and suppliers will improve WC*

Some inefficiencies originate at interface points with suppliers and buyers due to disconnected operational activities (Smid, 2007). These may include holding high inventory levels to mitigate against shortages due to delayed and/or incomplete supplier deliveries. The network companies that employed a financial service provider to resolve delays in the invoicing/invoice processing and collection/payment of sales managed to improve cash flows in the network.

Unilever practises this alignment as a consumer-products company which, in lowering the WC level, arranges with the financial service provider to grant its independent tea suppliers in Kenya access to credit at its rates (Hofmann and Kotzab, 2010). As the individual SC members' cycle times constitute the network C2C, having an SC member with access to cheap finance, rather than a smaller supplier with high WACC raising external finance, would benefit the whole SC through improved cash flows.

The benefits of operational coordination were demonstrated in Smid's (2007).analysis of WC performance across European industries over five years (2002-2006). Many industries, including Telecoms, Retail, Distillers and Brewers, and Chemicals, specifically focused on operational efficiency, SC optimisation and better terms with suppliers, managed to reduce WC. The underperforming ones, though, like Pharmaceuticals and Food Producers, began to follow suit, reducing WC by securing inventory management agreements with suppliers to monitor and manage inventory levels.

This illustrates that, in resolving operational inefficiencies, network companies need to jointly plan, steer and control material and financial flows in the extended company to facilitate an unhindered flow of goods/services and cash. They should develop inter-organisational understanding and harness the cross-functional interdependencies to sustain the extended enterprise. Network companies would benefit from viewing business processes beyond functional lines and along the whole SC to derive operational efficiency for all members.

(2.) *Information sharing increases net system benefits*

As cash lubricates trade, sharing timely and accurate information drives swift inter-organisational flows of goods and services. Such exchange of information allows suppliers to hold inventory levels informed by prevailing customer demand preferences (Hofmann and Kotzab, 2010). The information may include data about products, WC measures, and cash flow figures that would facilitate inter-organisational joint planning and control.

Dell's direct sales concept and information policy proved how precise demand forecasting could assist suppliers in improving planning and deriving optimal delivery schedules that would reduce related costs. The suppliers make frequent small deliveries to Dell, reducing the latter's inventory level while maintaining low inventory in line with the accurate demand forecast (Hofmann and Kotzab, 2010).

Dell was, however, criticised for exerting power to minimise its WC rather than collaborating with the suppliers to derive operational efficiency in the SC. In the long run, this practice would bring about financial inefficiencies that could compromise the competitiveness of the entire SC. However, the sharing of market information would

nurture trust between Dell and the SC members and mitigate against power struggles that normally discourage companies from collaboration. It would yield system benefits such as reduced inventory levels, lost revenue, and supply costs.

(3.) *Integration of financial and operational parts increases value in the supply chain*

SC companies employ various mechanisms that include operations technology, just-in-time approaches, reasonable production batch sizes and inventory management agreements with suppliers to reduce supply chain-wide inventory levels (Hofmann and Kotzab, 2010). This integration recognises that exceedingly long inventory periods increase the cost of capital.

The integrative, collaborative approach is demonstrated in the case of SwissPostLogistics (SPL), the logistics service provider positioned between Procter and Gamble (P&G, the supplier) and several retailers in Switzerland (the customers). The positioning of SPL between the SC parties allows it to derive increasing efficiency that increases the inventory turnover, thereby reducing inventory on hand. The goods' time-in-transit forms part of the seller or buyer's inventory period. Furthermore, the risk associated with ownership and implied financing flows over this supplier-logistics-service-provider-customer continuum (Hofmann and Kotzab, 2010).

To sustain this collaboration model, SPL must have precise market information on the SC, access to financing, and a relatively low cost of capital (Hofmann and Kotzab, 2010). There is a marked appreciation of effective supplier relationships, as shown by the increasing adoption rate of supply chain finance (SCF) in the face of extended accounts payable days (PwC *et al.*, 2018). An SCF programme involves vendor financing to accelerate account payables in days. It is believed that all this stems from the motivation to optimise WC, stabilise the supply chain health and improve suppliers' liquidity.

Inter-organisational accounting information systems can support this inter-organisational management control to reduce inventory and capital costs in the whole SC network, thereby creating value for all members.

5.4.1.2 Theme 2: Determinants of working capital

The central tenet of this theme is determining the underlying business-wide factors that drive WC needs. Such understanding can minimise trading risk and assist with deriving the optimal balance between the components of WC. WC performance varies between and within industries over time due to operating conditions and financial strength. For instance, companies with deficient internal financial resources and limited access to credit will aggressively use the account payables to finance their WC. In contrast, those with better access to capital markets normally have relaxed credit and inventory policies.

WC is necessary to drive business operations and manage unanticipated changes, for example, the Covid-19 pandemic, in the business environment. This involves decisions regarding the level of WC, both the amount and composition of current assets and the financing thereof to afford the business the necessary flexibility and agility.

The researcher will employ the five (5) constituent codes to discuss various WC determinants to explain why some companies will have low WC needs and others high ones. Understanding these determinants addresses the question: 'How can the underlying drivers of working capital be determined?'

(1.) *Access to credit affects WC*

Businesses that cannot generate adequate positive cash flows internally raise external finance, a costly option to fund the WC gap deficits (Hill, Kelly and Highfield, 2010). Large companies often fund their high levels of accounts receivable and inventory with outside finance as they have ready access to capital markets. In contrast, small companies use account payables more aggressively than receivables and inventory. Large companies with established governance systems are more creditworthy with relatively low capital costs. At the same time, their small counterparts not only lack internal financing ability but cannot afford the costly external finance option.

A 1991 comparative study of manufacturing companies in the US found that US-based Japanese companies used outside financing to provide adequate current assets required to support anticipated sales (Kim, Rowland and Kim, 1992). These companies received short-term finance from Japanese banks at favourable interest rates to finance the high account receivables. They even had less net WC relative to the US

companies due to management practices that included JIT programmes and inventory management systems, and high cash levels.

Therefore, a company's WC behaviour is largely informed by the operating conditions and its financial strength. The situation with US-based manufacturers underscores the importance of considering the trade-offs inherent in WC management decisions.

(2.) *Industry-type influences working capital*

Long supply-distance forces importing/exporting companies to carry large transit inventories. These companies, therefore, keep a buffer inventory of raw materials to cushion the impact of potential supply interruptions resulting in increased WC (Nunn, 1981).

Similar influences can be observed in concentrated industries, which tend to breed monopolistic competition and incentivise companies to hold additional inventory and/or extend generous credit. It is maintained that these companies hold negotiating power to dictate both supply/demand trade credit terms deficits (Hill, Kelly and Highfield, 2010). Companies need to consider the exogenous factors that influence working capital to set the appropriate level of WC.

(3.) *Large market share influences working capital management*

Market power affords industry leaders the ability to dictate credit terms without fear of reprisals, as small suppliers need them more for survival. The derived stronger negotiating power allows these companies to hold high account payables and low inventory and account receivables. This power is rooted in existing long-established relationships and substantial administrative costs in switching supplier deficits (Hill, Kelly and Highfield, 2010).

These companies exploit their market strength to obtain buying and selling advantages; for instance, negotiating delivery schedules that align with their production requirements, thereby effectively shifting their inventory burden to the suppliers. Such self-serving short-termism not only increases the overall cost of goods sold relative to other more collaborative supply chains but also weakens the competitiveness of the whole SC.

(4.) *Sales-related variables influence working capital management*

Companies that experience high sales growth increase account payables as they receive more favourable credit terms from willing suppliers on the strength of their growth deficits (Hill, Kelly and Highfield, 2010). The suppliers' willingness to grant more credit is motivated by the potential value of long-term relationships.

Businesses with relatively higher selling prices relative to competition readily grant generous credit to attract and retain customers. The high selling price translates to high profitability, all else equal (Nunn, 1981). The sales-related factors increase the WC levels.

(5.) Production-related variables influence working capital management

Increasing the % capacity utilisation brings economies of scale while increasing sales (Nunn, 1981). It, therefore, follows that a capital-intensive business would increase production output to recover the relatively high fixed costs.

Small batch production, order backlog, capital intensity and relative breadth of product line all have a positive relationship with WC. For instance, a wide product line with respect to colours, sizes, flavours, and finishes would require a large inventory to support production and thereby increase WC.

A clear understanding of these factors, which may be industry or company-specific, and their influences, would assist management in setting the appropriate level of WC.

5.4.1.3 Theme 3: Optimal level of working capital

The focus here is on maintaining an efficient mix of WC components to strike a balance between trade risk and return. The appropriate level of WC would enable businesses to generate adequate liquidity to sustain daily operations and even derive profitability (Filbeck and Krueger, 2005). This theme consists of three (3) codes; namely, holding high levels of working capital is costly, reducing current assets to release hidden funds, and setting the right level of working capital (Table 5.2).

Excessive investment in current assets reduces profitability due to the opportunity costs of funds tied up in the working capital. This was evident in various companies in the food, electronics and retail industries that found themselves on the brink of financial

ruin fuelled by, *inter alia*, the rising cost of money, high warehousing costs and loss from delinquent account receivables (Meyersiek, 1981).

Yet inadequate WC may bring about financial difficulties and inventory shortages, which could alienate both suppliers and customers. This was evident in the case of the South African national carrier (SAA), which was in 2019 placed under voluntary business rescue to salvage the airline after a decade of failure to generate cash (Wasserman and Cronje, 2019). It was noted that following several global corporate collapses, companies seemed to shift focus from the bottom line only to creating a cash culture (Lifland, 2011).

The three (3) codes collectively address the research objective: 'to provide the basis for determining the optimal (appropriate) level of working capital.'

(1.) *Holding high levels of working capital is costly*

There is an inherent tendency by operations managers in purchasing and production sales to purchase and hold high inventory levels (Meyersiek, 1981). This is in anticipation of potential inventory shortages and production interruptions. However, this inclination to hold high inventory levels ignores the high costs associated with warehousing, insurance, and inventory obsolescence (Ek and Guerin, 2011). These costs − together with cash flows lost from delinquent accounts receivable and substantial administration costs involved in enforcing debt collection − all add up to the high cost of holding excessive levels of WC. With the rising cost of money, this significantly increases the effective annual cost of WC, thereby eroding profitability.

The reality is that without cash to settle maturing financial obligations or invest in available profitable investment opportunities, the increased liquidity displayed by high levels of inventory and accounts receivable means nothing. Such a company would have no option but to resort to external financing. Market imperfections that include information asymmetry, lack of market access, and increasing interest rates render external funds an expensive source of finance (Appuhami, 2009). Companies should rather improve cash flows to reduce reliance on external finance.

(2.) *Reducing current assets to release hidden funds*

The reconfiguration of all business processes in the company that impact WC and automating these to eliminate non-value-adding activities improve WC management (Smid, 2007). This should enable better alignment with key customers and suppliers to facilitate a swift flow of goods and services, including cash and information in the supply chain.

WC reduction activities should be driven by an integrated approach to mitigate against inter-functional conflict across purchasing, credit, treasury, and sales divisions (Meyersiek, 1981). The creation of cross-functional business processes underpinned by workflow-based technologies enforces collaboration.

Businesses fund their daily activities through WC, utilising current assets financed by current liabilities. Reducing current assets to achieve an optimal mix of WC components, therefore, would increase internal funds and minimise finance costs, thereby creating business value. These funds would provide companies with a ready source of cash to drive operations and improve profitability.

(3.) *Setting the right level of WC*

The appropriate level of WC lies between risk and efficiency; that is, failure to meet maturing short-term financial obligations and avoiding excessive investment in current assets. The right level should reflect the entity's strategy and be influenced by the trade-offs inherent in managing WC (Ek and Guerin, 2011).

The suggested structured approach begins with reviewing current performance to determine the underlying business drivers of WC; then identifying potential improvement opportunities to optimise WC; and finally, evaluating these against the associated trade-offs. All actions must meet the agreed business case criteria, and corrective action must be taken where variances occur. The change should be driven by a cross-functional team that transcends all areas of the WC process in the business.

The strategic alignment would encourage the gearing of all WC decisions and actions towards achieving such a strategy. Also, any trade-off considerations would be based on strategic priorities, thus improving the company's overall performance when operating at the right level of WC.

5.4.1.4 Theme 4: Trade-off: Liquidity-profitability relationship

The focus of this theme lies in the ability of every business to meet its maturing financial obligations (liquidity) while still generating profit to create business value for long-term survival. These dual goals of WCM should be given equal attention as focusing on one will compromise the other (Smith, 1973).

The achievement of these dual goals involves the ability to convert current assets into sufficient and readily available cash to pay for goods and services and invest any surplus cash in short-term investments. Equally important for long-term survival, a company should generate a return on the assets entrusted to them by shareholders (Sagan, 1955). This theme addresses the research question: 'How can the working capital needs be balanced?'

Management should hold adequate current assets necessary to meet anticipated sales and finance these using internal and/or external funds. It is noteworthy, however, that holding excessive current assets may reduce profitability due to the opportunity costs of funds tied up in the WC that could be earning a return elsewhere. Yet, low levels of current assets may result in less liquidity and inventory shortages (van Horne and Wachowicz, 2004). Although greater current assets could indicate liquidity and less risk of shortages, the question remains whether the business can convert these to readily available cash. Cash conversion efficiency is paramount to investors such that there exists a positive relationship between a company's return and its cash conversion efficiency rank (Filbeck, Krueger and Preece, 2007).

A short cash conversion cycle (CCC) is considered valuable as it leads to a higher net present value of cash flows generated by assets and thereby increases business value. The resultant increased positive cash flows would not only reduce reliance on costly external finance but afford business flexibility and scope to drive expansionary initiatives and/or invest in available profitable opportunities. Reducing the level of current assets to a reasonable extent would increase profitability due to the low net cost of WC associated with the shortened operating cycle.

Five (5) codes constitute this theme, demonstrating the important relationship between improved cash flows and profitability for overall business performance.

(1.) *Automating operating systems improves cash management*

Several companies have integrated their business activities with IT solutions to address the pressure on cash and liquidity (Camerinelli, 2010). Automation of business processes simplifies and accelerates the processing of transactions to allow faster collection of sales and enhance control of payments through increased visibility of cash flows.

Two instances of business process integration with specialised IT solutions to improve cash flows are provided below.

- The combination of web-based technologies and supportive financiers enables a supplier to get paid early without using the payer's cash to make it. At the maturity of the invoice, the payer reimburses the financier's advance.
- Companies enhance accounts payable (A/P) and accounts receivable (A/R) practices, speeding up collections, exercising greater control over their disbursements, decreasing payment processing time and costs, and reducing errors and fraud risk (Camerinelli, 2010).

The integration is based on a payment processing network that comprises internet connections with banks, other financiers, customers, and suppliers. The internet connections streamline account receivables and payables to reduce processing costs and free up cash flow tied up in WC. Other benefits include reduced errors and risk of fraud.

(2.) *Cash forecasting improves cash flows*

A contemporary cash flow performance management system with simulation engines improves the forecasting of day-to-day liquidity needs and subsequent funding (Gundavelli, 2006). The following extract highlights the benefits of a cash flow performance management platform:

> "First is the ability to apply proven best practices in credit, receivables, and payables automation worldwide. Second, a flexible and collaborative platform will enable multiple departments to streamline cash flow and dispute resolution processes. Finally, having performance management capabilities, including predictive analytics and reporting, allows senior

executives to gain insight into overall cash flow management and develop higher working capital efficiencies" (Gundavelli, 2006).

This exercise should, however not exclude cash flows lost from delinquent account receivables, associated administrative costs and unpredictable revenues. Cash forecasting should therefore include collaborations between treasury, corporate finance, and division managers to consider the potential impact of credit policy and inventory management.

Most companies that employed forecasting methods experienced low delinquent accounts receivable and bad debt levels (Ricci, 1999). This is owing to the increased visibility of cash flows as the cash-flow schedule depicts future cash inflows and outflows to guide the planning of business cash requirements.

(3.) *Decreasing DAR enhances cash flows*

The efficient use of receivables and related credit policies enhances cash flows, as was seen in European countries in 2006, where a 2.9% decline in DAR and a 1.4% decline in inventory derived from a 2.8% decrease in CCC (Smid, 2007).

The longer collection of credit sales constrains the cash position and forces the business to seek external finance to fund its working capital. Delinquent account receivables may be construed to indicate failing internal processes. This is supported by a finding in a survey of 8,000 companies that though, on average, 25% of account receivables become bad debts, only under one% were ever written off as a loss (Sanchez, 1992).

The following are various accounts receivable management methods that are effective in reducing debt levels:

- Ageing schedules, days sales outstanding (DSO) and bad debt percentage model.
- Automated customer collection, custom-specific proactive collection, and dispute resolution.
- Accounts receivable forecasting and percentage of sales model.
- Offering generous cash discounts to prompt payers, improving product quality to reduce disputed receivables, and debtor factoring.

However, the administrative costs associated with the interventions to collect data and monitor accounts receivable, and the unintended effects of an aggressive WC approach may diminish profitability since stricter credit terms may decrease sales volume and revenue.

(4.) *Increasing inventory turnover enhances cash flows*

Shortening the time of holding inventory will improve cash inflow from the sale of inventory (Lifland, 2011). Companies should employ reduction methods such as JIT programmes or grant customers attractive credit terms to move inventory and avoid inventory build-up (Boisjoly, 2009).

Lifland's (2011) study (2004 – 2009) of WCM practices of companies within various industries showed that the Chemicals, Food and Health industries increased inventory turnover and reduced the days of inventory, thereby reducing dependency on external financing.

There are advanced inventory management systems that offer solutions such as integrated forecasting and demand-planning processes, integrated tracking, and communication of performance to monitor slow-moving and obsolete stock. Better inventory management control would lower warehousing insurance costs and curb obsolescence.

(5.) *Shortening the CCC improves cash flows*

Eliminating non-value-adding time is an effective way to improve efficiency in the operating cycle, as this would release funds tied up in the WC (Shin and Soenen, 1998). This action recognises that drivers of the operational cycle are more operational than financial. The operational cycle flows from the supply side through forecast-to-fulfil to the demand side (Hofmann and Kotzab, 2010).

The shorter CCC would increase shareholder value as internally generated cash flows minimise the WC requirement, positively impacting the company's cost of capital. However, management practices such as accelerating the collection of credit sales, improving inventory management and trade credit practices to shorten the CCC should be balanced with maintaining good supplier relationships. Also, delayed creditor payments could damage the relations with suppliers and increase the cost of supplies.

Divisional managers should rather exploit settlement discounts where appropriate and make infrequent payment runs (Smid, 2007). Companies should adopt a collaborative CCC approach to reduce the SC-wide inventory levels through operations technology, reasonable batch sizes and JIT programmes (Hofmann and Kotzab, 2010).

Noteworthy is the assertion that an efficient operating cycle would provide businesses with cash for further purchases of raw materials to increase sales and profits pervades all five (5) codes of this theme. The increased cash would reduce the need for external financing, thereby saving on financial costs and enabling a business to exploit profitable investment opportunities that are available. These benefits lend credence to the above findings that a short CCC improves profitability.

The four (4) themes discussed above embody shared meanings and experiences regarding the phenomenon of WC and its management, as reflected in the existing literature. The themes are interrelated and build on each other to give coherent insights and broaden the understanding of this phenomenon. The discussion of these themes is underpinned by the extracts from the entire data set to situate them and demonstrate the interconnections between themes and data. Themes should express a coherent account of the patterned meanings and experiences in the data relating to the research problem and questions.

The themes were then depicted in an initial model to capture the emerging propositions that explain working capital and its management.

5.4.2 Initial model

This exercise followed Morgan's (2018) assertion that models depict interrelationships between themes and are an apex analytical outcome. The graphic presentation of these relationships improves the understanding of the model. The presentation and discussion of the initial working capital model (Figure 5.4) follow.

MANAGEMENT OF WORKING CAPITAL

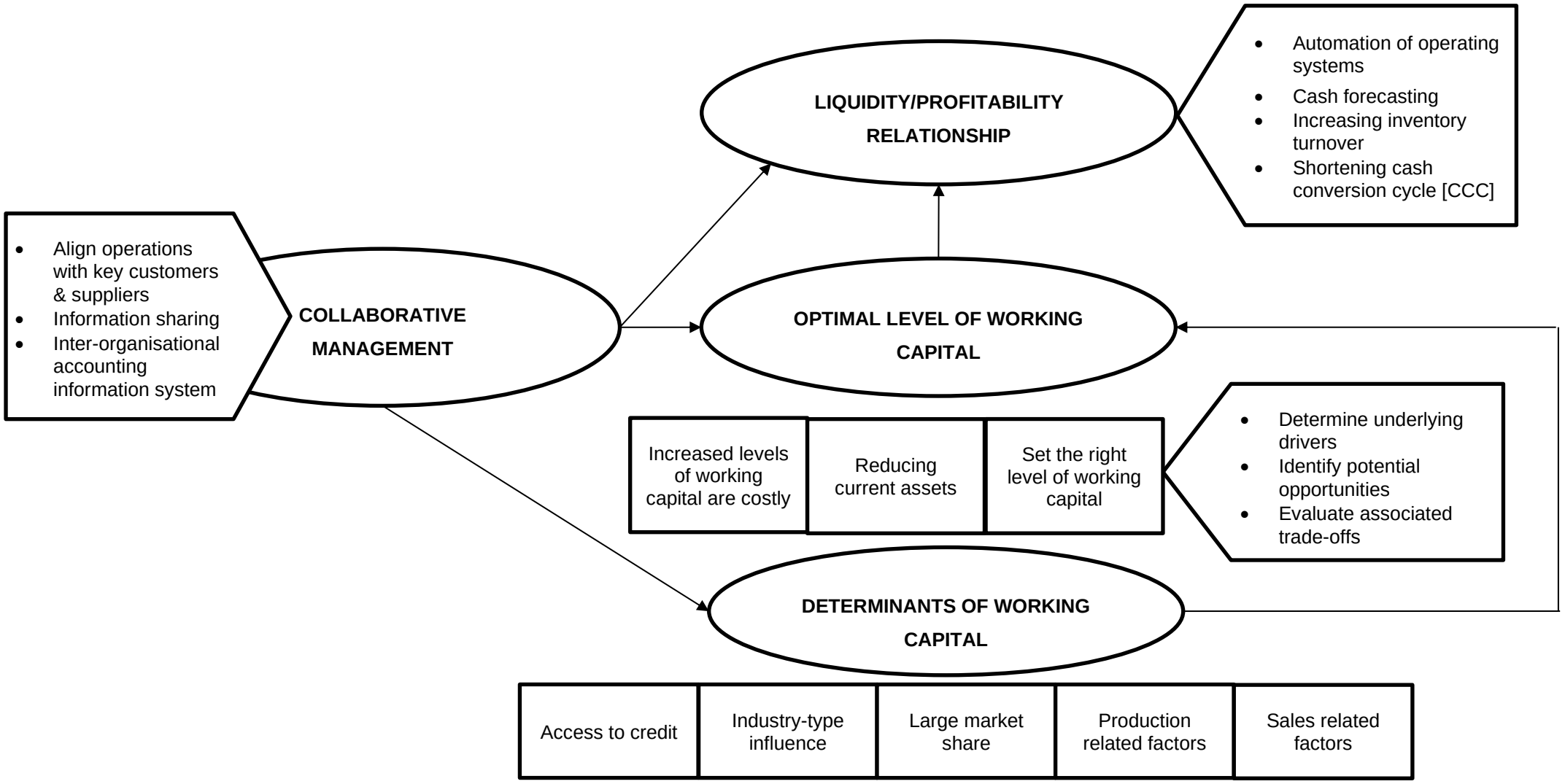

Figure 5.4: Initial model of working capital (Source: Researcher's own

The model is certainly not a mere graphic representation but the interpretation of identified patterns of meaning in the data relevant to answering the research questions (Braun and Clarke, 2012). The four (4) themes constitute a systematic approach to managing working capital and should therefore be considered as a unit, not disparate parts. The model is not a sequential arrangement of the themes governed by a linear function but interconnected principles meant to guide and facilitate the decisions and actions of product line managers. For instance, it is recommended that collaborative management thinking must permeate the plans of reducing working capital to derive adequate liquidity for all network companies.

5.4.2.1 Overarching theme: Collaborative management

The collaborative approach sets the tone for this behavioural process and provides an umbrella to cover the other three. Its premise contends that a company that aligns and coordinates its operations with key suppliers and customers will derive operational efficiency in the network and thereby create value. The basis is that operational efficiency will eliminate duplications and reduce operating costs significantly, effectively enhancing the whole network's competitiveness.

The three (3) components, namely ‘Aligning operations with key customers and suppliers’, ‘Information sharing’ and ‘Integration of financial and operational parts’, are all effective levers to drive and sustain the operational coordination in the network. Precise and timely information about prevailing customer demand preferences provides essential support for joint planning and control at the inter-organisational level. The joint exercise allows participating companies to obtain inter-organisational understanding and harness cross-functional interdependencies.

5.4.2.2 Determinants of working capital

These include both endogenous and exogenous factors that impact the level of WC. As discussed above, understanding these underlying factors can minimise trading risk and assist with determining the optimal balance between the components of working capital. This affords business flexibility and agility not only to maintain daily activities but also to navigate the fluid business environment.

This can be seen in how various companies reacted to the 2008 credit crisis (termed the ’credit crunch’); some reduced WC by increasing the collection of sales and

reducing inventory costs, yielding positive cash flows. Others even increased WC balances to meet liquidity and solvency requirements set by financiers (Westerman, 2010). Better access to credit allowed US-based Japanese companies to maintain relaxed credit and inventory policies (Kim, Rowland and Kim, 1992). These actions underscore Ek and Guerin's (2011) assertion that considering inherent trade-offs enables a business to set its appropriate WC level.

5.4.2.3 Optimal level of working capital

Guidance here recommends that businesses should not hold excessive levels of current assets as this reduces profitability. Current asset-reducing methods may involve the reconfiguration of all business processes in the company that impact working capital and automation to eliminate non-value-adding activities (as seen above in the recommendations to improve operating cash flows under the Liquidity/Profitability relationship theme). Such reconfiguration may result in faster collection of sales and effectively shorten the operational cycle to improve cash flow.

In setting the optimal level, the model follows Ek and Guerin's (2011) structured approach that begins with reviewing the current performance to determine the underlying drivers of working capital, then identifying potential improvement opportunities to optimise working capital, and finally evaluating these against the associated trade-offs.

Ek and Guerin (2011) maintain that the appropriate level of working capital lies between the current and could-be performance levels. It is critical that the right level reflects the entity's strategy to encourage management decisions and actions geared towards such strategy. It is believed that this alignment would enable the company to achieve the dual goals of liquidity and profitability and thereby maximise value in the long term.

5.4.2.4 Liquidity/Profitability relationship (trade-off)

These dual goals of WC relate to the ability to generate adequate internal cash flows to meet maturing financial obligations while deriving a positive return to create business value in the long term. It is maintained, though, that the balance between risk and efficiency occurs at the optimal level of working capital. This refers to both the quantity and composition of WC components. However, without a clear and firm grasp

of the underlying drivers of WC needs, it would be hard to determine the appropriate level of WC to achieve liquidity and profitability. Put differently, a WC view of a company − that is, understanding what constraints WC performance and opportunities for improvement − enables management to optimise WC.

All the guiding measures within this theme focus on improving cash flows in the business by eliminating non-value-adding time in the operational cycle to improve efficiency and release funds tied up in the WC. Importantly, positive cash flows reduce reliance on costly external finance. The potential saving of the financing cost and a return on investment in available profitable opportunities may boost business performance. Of course, the higher net present value (NPV) of cash flows increases business value (Shin and Soenen, 1998).

The evident interlinkages among the four (4) themes effectively demonstrate the strength of this model; the theme principles coherently create a guiding framework to manage working capital. The model is, therefore, not a step-by-step guide that requires first the completion of identifying the determinants of WC before determining the optimal level of WC; rather than understanding business-wide factors that impact the WC is integral in setting the appropriate level of WC to enable management to sustain business operations collaboratively, internally and externally. Such understanding may assist management in appreciating the inherent trade-offs, like relaxing credit terms to retain a large customer or increasing WC to develop a new market (Ek and Guerin, 2011).

This model was developed to systematise the management of WC and improve the understanding of this phenomenon. Financial management is understood to be a behavioural process that is largely intuitive, not rational. Therefore, understanding the perceptions, assumptions and actions of finance practitioners and the meanings that they attach to the business environment can illuminate this social phenomenon. It was against this backdrop that the preliminary model was evaluated by WC management practitioners for its rigour, that is, its effectiveness in managing WC optimally.

5.5 CHAPTER SUMMARY

The discussion started with the presentation of the summary of collected data, followed by the analysis of data, together with the interpretation of the findings in relation to the

research questions. The research findings included the themes and codes generated through concept mapping and the initial model that captured the themes. The researcher connected these visually in a model to express what the textual data reveal about the research problem and questions.

The model comprises four (4) interrelated themes, namely, 'Collaborative management'; 'Determinants of WC'; 'Optimal level of WC'; and 'Liquidity/Profitability relationships (trade-off). These themes hold unique and specific aspects and provide a coherent account of the patterned meanings and experiences in the data about the research problem and questions. Each theme is defined by discussing high-level codes to demonstrate the interconnections between themes and the entire data set.

The initial model, which depicts the four (4) themes to capture the emerging propositions that explain working capital and its management, was then presented. The model is the interpretation of identified patterns of meaning in the data that are relevant to answering the research questions. The four (4) themes constitute a systematic approach to managing working capital and should therefore be considered as a unit and not disparate parts. The model comprises interconnected principles meant to guide and facilitate the decisions and actions of product line managers.

As the model provides a systematic framework to guide the decisions and actions of managers regarding WC, it broadens the understanding of this social phenomenon and thereby improves financial performance. WCM practitioners would be empowered to identify the underlying factors of WC and thereby maintain business operations. The model would help to bring about goal congruence between the decisions and actions of managers regarding current assets and liabilities and corporate strategy. Businesses could derive the dual goals of WCM, that is, liquidity and profitability.

In the following chapter, data are presented from the two (2) focus groups, after which there is a discussion of the themes that emerged from the data and how these were mapped to refine the initial model.

CHAPTER 6: VALIDATING THE MODEL

6.1 INTRODUCTION

In the previous chapter, the summary of collected data was presented, followed by the discussion of data analysis and the interpretation of the findings in relation to the research questions. The research findings included the themes and codes generated through concept mapping and the initial model that captured the themes.

In this chapter, the concepts that emerged from the focus groups' data are discussed in section 6.2, and how these were mapped to refine the initial model in section 6.3 before the final model is presented in section 6.4.

This exercise of data collection and further analysis through focus groups align with Phase 3 of the design-based research (Figure 4.1) – the testing and refinement of the practical intervention (Herrington *et al.*, 2007).

6.2 FOCUS GROUPS' DATA

Qualitative researchers often hold informal group discussions with a small number of individuals simultaneously to collect data about research topics (Onwuegbuzie *et al.*, 2009). It is contended that participants may be reluctant to share their thoughts, beliefs, and experiences in large groups. The researcher held conversations with financial management practitioners to discuss their perceptions and thoughts about the initial model, drawing from their respective experiences in WC management.

They were members of WC management teams from two (2) JSE-listed companies: a retail chain store (four members); and a property developer (three members). The focus group members held decision-making authority over WC matters as chief financial officers and existing product-line managers, respectively. Social scientists have encouraged using very small teams of not more than three or four participants with expert knowledge and/or experience when they hold group discussions (Krueger, 2002).

The focus group data comprised transcripts from audio recordings and field notes constructed by the moderator and assistant moderator. The researcher listened to the recordings, reviewed field notes, and critically read the transcripts, making notes on the entire data set. The focus was on portions of data relevant to the research

questions to improve the understanding of the WC phenomenon. The data were organised in a question-by-question format with amplifying quotes (Appendices E and F).

The group was used as a unit of analysis for the practitioners' perceptions and impressions of the practical solution, a practice endorsed by most focus group analysts (Onwuegbuzie *et al.*, 2009). There was no comparative analysis, but the data was interpreted against the initial model and employed to refine this version to finalise the proposed model. This aligns with the design-based research approach, which requires that once designed and developed, the proposed solution should be implemented and evaluated in practice to improve and refine the intervention (Plomp and Nieveen, 2007).

The group data were coded in various cycles (see Figure 5.1) to map out emergent concepts that yielded important information about the research topic (Onwuegbuzie *et al.*, 2009). The focus was on the participants' actual words and meanings, tone of voice and strength of feeling. The researcher gave more weight to specific responses and those flowing from experience (Onwuegbuzie *et al.*, 2009). Themes were constructed similarly to those in the development of the initial model (Data analysis: Section 4.6).

6.2.1 Focus Group 1 Data

Table 6.1 shows significant or most grounded codes from Focus Group 1(retail chain store).

Table 6.1: Codes Applied to Focus Group 1 Data

Finalised Codes	Quotations
1. Set the right level of WC	1.1 Level of stock managed rather than supplies. 1.2 Optimum (WC): depends on the strategy. 1.3 Sell stock before supplier(s) demand payment. Increase stock turnover and collect (sic) debtors before paying. 1.4 Where do you derive the high ROI [creditors/customers/stock turnover]? 1.5 Right level of stock to satisfy customer needs.

Finalised Codes	Quotations
2. Teamwork improves WC management.	2.1 Coordinating a job that requires the support of a wide team. 2.2 Right people in the right places. 2.3 Teamwork to drive the strategic intent. 2.4 Senior people are giving a strategic message to guide.
3. Interpersonal skills facilitate collaborative management.	3.1 Interpersonal skills [necessary] to communicate the impact of transactions. 3.2 Interpersonal skills [necessary] to convince and take people along the journey. 3.3 Stopped dictating and directing to listen more than talk. What you don't know is more important. 3.4 Cross-functional imperative: engage other people.
4. Creating liquidity to sustain the business.	4.1 Driving cash flows [CCC]. 4.2 Payment on time. 4.3 Better terms with suppliers. 4.4 Strong culture of creating liquidity and delivering value to the customers. 4.5 Generate cash: cash is the glue.

These codes neatly fit into the preliminary model and themes (Table 5.1).

Table 6.2: Emergent Themes

Finalised Codes	Themes
1. Set the right level of WC	Optimal level of WC
2. Teamwork improves WC management	Collaborative management
3. Inter-personal skills facilitate collaborative management	Collaborative management
4. Creating liquidity to sustain business	Liquidity/Profitability relationship

The above themes confirm the proposed model.

When asked about the proposed model, the group members responded to the question 'What did you think about the proposed model?' as follows:

> Member 1 **-** *"Keep WC management as simple as possible. Covers a lot of elements. Can work; focuses attention. Suggestion: use our business example [generic vs specific]."*
>
> Member 2 **-** *"All-encompassing. Covers all influences, (the) key drivers. Simple and workable. Suggestion: it should say what debt should be."*
>
> Member 3 **-** *"Good example of high-level view, however, specifics/detail needed. Sets the tone and strategic approach. Has good flow as a model. Good thinking approach sets the critical areas to focus on."*
>
> Member 4 - *"Simplicity of workflow [workable] determines areas that need focus."*

This group endorsed the initial model and its effectiveness, as shown by the comments: *"[C]overs a lot of elements. Can work"* and its importance: "[*H]as good flow as a model. Good thinking approach sets the critical areas to focus on."* They even offered the use of their company for the pilot project. This was very welcome as it would allow further evaluation to report on the actual effectiveness of this intervention. The field test will be conducted as part of post-doctoral studies.

Another suggestion was that the model should define the 'level of debt.' Debt is an expensive source of funds due to greater costs associated with external sources. Significantly leveraged companies are inclined to negotiate extended terms with suppliers and/or have stringent credit terms with their customers (Vicente, Palombini and Nakamura, 2012). This model advocates the ability to generate adequate internal funds and thereby reduce reliance on costly external finance. The internal funds will not only sustain daily operations but increase long-term value through the high NPV of cash flows.

Even though large established companies may have readily available credit due to better capital market access and favourable finance rates, they should still employ efficient management practices such as JIT programmes and inventory management systems and high cash levels to maintain less net WC. Small companies, however,

with weaker internal finance, cannot raise external finance due to limited access to credit markets and/or poor creditworthiness. The initial model was not adjusted to include this suggestion.

The model comprises interconnected principles that create a guiding framework to systematise the management of WC. It is recognised that WC performance varies between and within industries over time due to industry- and company-specific factors. WC should therefore be set at the right level to achieve the corporate strategy and to consider inherent trade-offs in the process. The initial model did not incorporate this suggestion.

6.2.2 Focus Group 2 Data

The data from Focus Group 2 (property developer) is shown in Table 6.3.

Table 6.3: Codes Applied to Focus Group 2 Data

Finalised Codes	Quotations
1. Positive cash flows will drive business.	1.1 Tracking cash flows in real-time: liquidity drives business. 1.2 Part of cash and assets to drive business. 1.3 Liquidity: no company will go down because of no profitability in the short term. 1.5 Creditors management: more practical to keep business going.
2. Effective communication is important in sustaining business.	2.1. Communication is linked to survival: one person not speaking up can drive business down. 2.2 Diagnostic skills: the ability to identify the core issue in a problem. 2.3 Requires effective communication to enable the transition from a family-owned business to a public company.
3. Collaborative management will optimise working capital	3.1 Focus on collaborative management to obtain the optimal level of WC. 3.2 Optimal level of working capital. 3.3 Collaboration will need soft skills.
4. Industry-type influence	4.1 Interlinkages between determinants of working capital are an important aspect:

Finalised Codes	Quotations
	during problems, operations are called to clean up. 4.2 70% level of attention is given to the determinants of WC.

The four (4) codes fall perfectly within the existing themes in the preliminary model.

Table 6.4: Emergent Themes

Finalised Codes	Themes
1. Positive cash flows will drive business.	Liquidity/Profitability relationship
2. Effective communication is important in sustaining business.	Collaborative management
3. Collaborative management will optimise working capital.	Collaborative management
4. Industry-type influence	Determinants of WC

This fit confirms the preliminary model and themes, and such verification is underscored by the quotations from the group members' responses to a question about the proposed model. The question and the practitioners' responses follow: 'What did you think about the proposed model?'

> Member 1 - *"Generally, it fits with our business model. It works! Focus on collaborative management to obtain the optimal level of WC."*
>
> Member 2 - *"It works! Very accurate in what one must do, but silent when things go wrong. Determinants of WC [70% level of attention] – everything that affects WC is here."*
>
> Member 3 - *"Model captures the overview of WC [confirms all the things that we battle with]. Suggestion: order of determinants as these vary with business, to market-production-credit access."*

The practitioners confirmed that the intervention can be used for what it was designed and developed for, that is, its intended function. The above quotes, such as" *(G)enerally, it fits with our business model"* and *"(V)ery accurate in what one must do,"*

all confirm that the practitioners could work with the model proving its practicality and were willing to apply it in their day-to-day activities, indicating its relevance and sustainability. It is, however, important to consider their question(s) or suggestion(s) to enhance the model; for instance, one group member remarked that: *"… (the model is rather) silent when things go wrong."*

Noteworthy is that management of WC is a behavioural process that involves decisions and actions taken by product-line managers, considering alternate goals that individual managers want, desire, or need as motivated by endogenous and/or exogenous factors (Novicevic, Clayton and Williams, 2011). The model, therefore, does not attempt to prescribe for every potential business situation but aims to orient managers toward decisions and actions regarding current assets and liabilities that are geared towards achieving the corporate strategy. Its interconnected principles constitute a structured framework that guides in determining the appropriate level of WC required to improve overall financial performance.

Another group member remarked that it should *"*[*set the*] *order of determinants, as these vary with business, to market-production-credit access."*

Every business should effectively employ its core competencies to navigate the business environment in a virtuous circle and not linearly. This follows from the reality that no single player has absolute control over exogenous conditions such as macroeconomic factors, actions of other economic players and/or the regulatory framework. Consequently, the model emphasises the understanding of underlying factors in determining the optimal level of WC. After all, the variable nature of WC performance is attributed to industry and company-specific factors.

The appreciation of trade-offs inherent in WC management can be witnessed in the US-based Japanese companies, which maintain relaxed credit and inventory policies due to better access to credit (Kim, Rowland and Kim, 1992). Even importing companies carry greater transit inventories due to the increased risk of supply interruptions in long supply pipelines. As business factors, endogenous and exogenous variables do not necessarily impact WC in sequential order. The model espouses the determination of the business-wide factors to improve WC performance. The initial model was, therefore, not adjusted to take this suggestion into account.

Notably, both focus groups mentioned emphatically that "*interpersonal/soft skills*" were key ingredients to facilitate the collaborative management approach. The retail chain store team emphasised that interpersonal skills were critical for business "*to convince and take people along [on] the journey*." Even the property development team mentioned that effective communication would accelerate the completion and strengthening of their "*transition from family-owned business to public company*."

Taking people along on the WC transformation journey requires sustained, demonstrable commitment and effective communication from senior management. Management should employ structured communication channels to share strategic plans and objectives with employees in all organisational spheres (Kalogiannidis and Papaevangelou, 2020). When all employees understand the plan and its goals, they will cooperate to achieve the organisational task and enhance productivity (Orel, Alonso and Almeida, 2019).

Several companies in complex process industries (chemicals, drugs, and metal) that undertook current asset reduction programmes realised that top management interest and commitment directly influenced the energy at the shop level. Furthermore, the combined top-down and bottom-up approach yielded significant success in WC management improvements. This success was supported by a continuous flow of information at all organisational levels, which motivated employees to perform better (Kalogiannidis and Papaevangelou, 2020).

Developing and enhancing interpersonal skills can strengthen inter-organisational networks to accelerate the flow of information in the whole supply chain. Such communication assists in bridging the gap between network companies and other stakeholders. It breeds shared power and a high level of trust that would build effective SC relationships that focus on a win-win situation. It is reported that Citi Bank achieved continued growth through collaborations with various stakeholders to identify areas for change (Kalogiannidis and Papaevangelou, 2020).

The researcher, therefore, included 'interpersonal skills' as a fourth code of the 'Collaborative management theme*'* to finalise the initial model.

6.3 FINAL MODEL

The model comprises four (4) themes which collectively provide a systematic framework to manage working capital. The themes are interconnected principles that must be considered in unison as a guide to facilitate the decisions and actions of product line managers to achieve the dual goals of WCM, that is, retaining liquidity in the short-term and profitability in the long run (long-term value). It makes a valuable contribution towards filling what Bellouma (2010) bemoaned as a research gap in WCM despite its impact on the profitability and liquidity of a company. The model satisfies the standard requirement of a PhD candidate to make a significant and original contribution to their field of study. The graphic presentation follows in Figure 6.1.

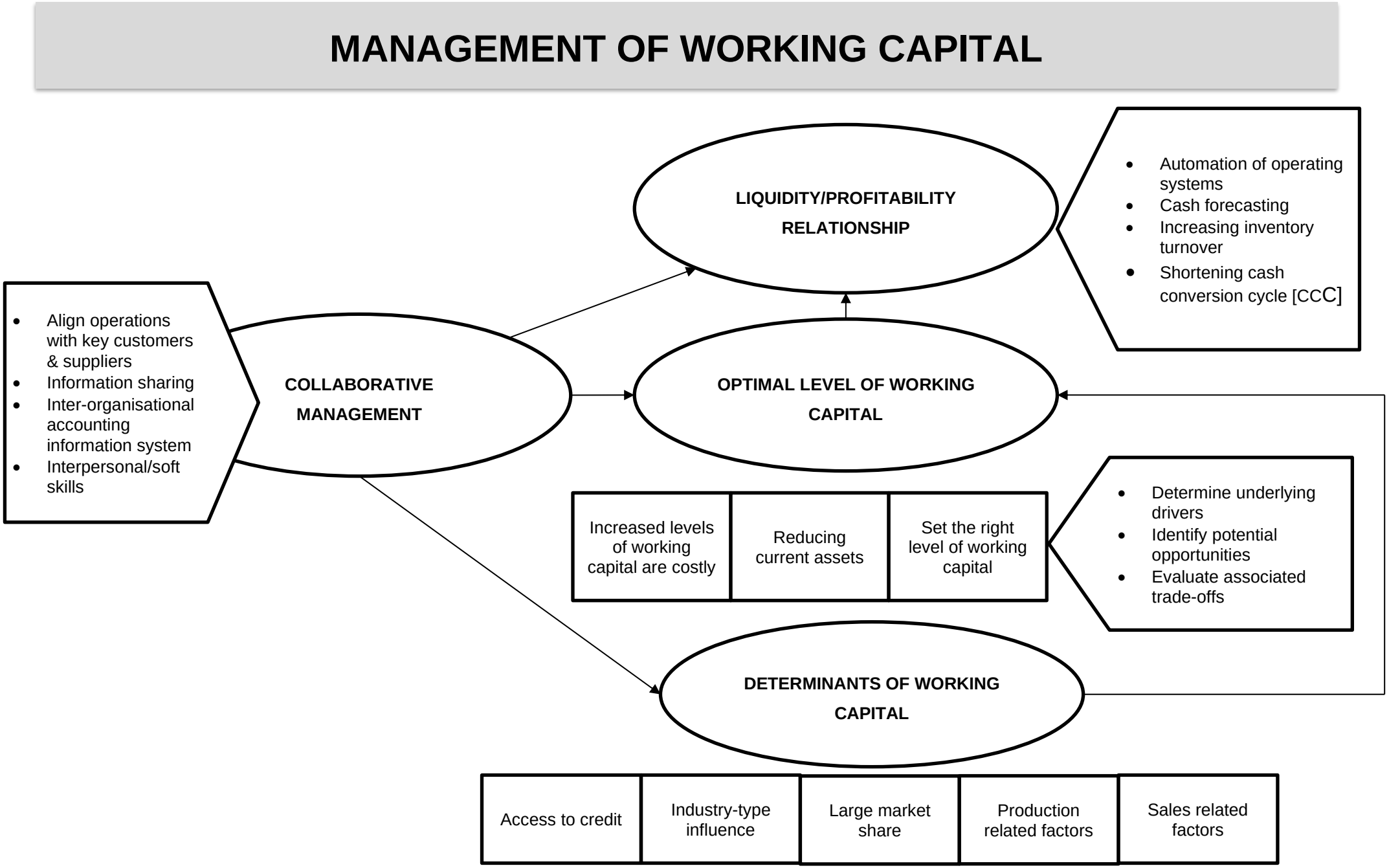

Figure 6.1: Final Working Capital Management Model

In systematising the management of WC, the model broadens the understanding of this social phenomenon, thereby improving financial performance. Such understanding will empower financial management practitioners to recognise the business-wide drivers of working capital needs and sustain business operations. The model motivates the decisions and actions of managers regarding current assets and liabilities that are aligned with corporate strategy. By determining an efficient mix of WC components, the company can maintain a balance between trade risk (inability to meet financial obligations) and efficiency (positive return).

6.4 CHAPTER SUMMARY

In this chapter, the researcher presented the focus groups' data and discussed the themes that emerged therefrom, their mapping to refine the initial model before showing the final model. Verification of the model was critical as the design-based research approach prescribes that when designed and developed, the proposed solution should be implemented and evaluated in practice to improve and refine the intervention (Plomp and Nieveen, 2007). The target users evaluated the intervention to determine whether they could work with it and were willing to apply it in their day-to-day activities, thereby showing their faith in its practicality, relevance, and sustainability.

Informal group discussions were held with financial management practitioners from the retail chain store and property developer, respectively. The practitioners employed expert knowledge and experience to discuss their perceptions and opinions of the initial model. Keeping a focus on portions of data relevant to the research questions, the data were then coded to map out emergent concepts in a similar fashion to the development of the initial model. The themes yielded important information about the research topic and were employed to refine the proposed intervention.

The emergent themes from focus groups confirmed the practicality and effectiveness of the initial model, as evidenced by the affirmation that *"[The model] covers a lot of elements. Can work"*. The practitioners expressed willingness to apply it in their day-to-day activities, endorsed its relevance and sustainability and offered the use of their business example [generic vs specific].

The pilot test is planned to take place as part of post-doctoral studies to test the actual effectiveness. At this stage, the researcher could evaluate only the expected effectiveness. In designed-based research (DBR), the expected effectiveness of the intervention can be evaluated as demonstrated in the investigation of micro-scale experimentation to improve the curriculum in Tanzania (Plomp and Nieveen, 2007).

Notwithstanding the focus groups' validation of the intervention, both recommended emphatically that the model should include interpersonal/soft skills as the lever to facilitate the collaborative management approach. They argued that interpersonal skills are critical for business "*to convince and tak[e] people along [on] the journey*." It was previously noted that the combined top-down and bottom-up approach yielded significant success in WC management improvements. Interpersonal skills can strengthen inter-organisational networks and build effective SC relationships that focus on a win-win situation in the supply chain (Kalogiannidis and Papaevangelou, 2020).

Since effective communication assists in bridging the gap between the disconnected network companies, it was consequently included as a fourth code of the Collaborative management theme to finalise the initial model.

In the following chapter, the researcher discusses how the study addressed the research objectives and sub-objectives. The discussion also includes the implications of the model for both scholars and practitioners, the research problem, and the research's limitations and recommendations for future studies.

CHAPTER 7: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

7.1 INTRODUCTION

Cash is King! Generating adequate internal funds is vital for every business as this creates a source of cheap and internally controlled funds, unlike external financing. Positive cashflows allow companies flexibility and agility to navigate uncertain times and reduce reliance on costly external finance. Considering the contemporary tightening monetary policy and constrained economic performance, optimising working capital will afford companies breathing space to navigate uncertain times (PwC *et al.*, 2018).

WC represents the investment made by the company to drive and sustain its business activities. Current assets constitute more than 50% of total assets, and managers spend most of their time managing WC. In this regard, the study sought to bolster the understanding of the WC phenomenon by developing a conceptual model to systematise its management. The model comprises four (4) themes that act in unison to give guidance to determine the appropriate level of WC and thereby improve overall financial performance.

The following questions guided this qualitative research inquiry:

Main research question:

> How could the management of working capital (WC) be systematised so that companies can manage WC well?

Sub-research questions:

1. How can the underlying drivers of working capital be determined?
2. Is there a right level of working capital?
3. How can working capital needs be balanced?

In answering these questions, the researcher adopted DBR and thereto carried out data analysis through a thematic approach (TA) to capture shared meanings and experiences about WC and its management. This approach involved disaggregating data into its essential elements, the codes, and thereafter re-linking similar or related codes into themes which enabled the researcher to capture what was talked about or written about WC (Braun and Clarke, 2012). The themes were underpinned by related

data extracts drawn from the entire data set to enable readers to understand the WC phenomenon better.

The study adopted a hybrid approach that followed a combination of inductive (data-driven) and deductive (theory-driven) approaches in the actual design, data collection and analysis of data. The researcher employed relevant and commonly used literature constructs to define the concepts of WC (concept mapping) based on his technical knowledge and personal experience. Data analysis was broadly conducted in two (2) stages, the initial model and verification of the intervention by the focus groups in alignment with design-based research (DBR).

Below is the summary of the study findings and a discussion of the conclusions drawn from how the study's research objectives and sub-objectives were achieved. The discussion also includes the model's implications for both scholars and practitioners, as well as the research problem. Finally, the researcher discusses the research's limitations and his recommendations for future studies.

7.2 SUMMARY OF THE FINDINGS

The summary comprises the themes that emerged from the mining of existing literature for relevant and commonly encountered WC constructs and focus groups' data to verify the model. The themes reflect similarities or interrelations between the codes; that is, sections of texts that were objectively identified in the textual data from public domain sources important to the research questions. These were depicted in a model to capture the emerging propositions that explain working capital and its management.

7.2.1 Collaborative working capital management

Network companies align and coordinate their operations with key suppliers and customers to improve WC performance. The inter-organisational networks are aimed at resolving inefficiencies that originate at points of interface with suppliers and buyers due to disconnected operational activities. The inefficiencies are resolved through joint planning, steering, and controlling material and financial flows in the extended company to facilitate an unhindered flow of goods, services and cash.

This theme resonates with Hofmann and Kotzab's (2010) call for network optimisation to create value for all SC participants. The call recognises that companies are not

immune to operational inefficiencies along the SC and that these ultimately get passed on to the customer, increasing the overall cost of goods sold. However, the fear of losing competitive advantage through operational coordination discourages some companies from collaborating. These concerns can, however, be managed through effective communication to share power and develop working relationships that aim at a win-win situation.

The collaborative management approach facilitates the research purpose of optimising WC management. Its three (3) codes serve as effective levers to drive and sustain operational coordination in the network. The joint planning exercise allows network companies to obtain inter-organisational understanding and harness their cross-functional interdependencies. This benefit renders this approach superior to the traditional WC management characterised by inward-looking, self-serving practices.

7.2.2 Determinants of working capital

The ability to recognise the underlying business-wide factors that drive WC needs minimises trading risk and assists with achieving the optimal balance between the components of WC. Understanding WC determinants is necessary to drive business operations and manage unanticipated changes in the dynamic business environment.

This theme addresses ‘How can the underlying drivers of working capital be determined?’ The discussion of various WC determinants explains why some companies have relatively low WC needs, and others have high ones. There is structured guidance to determine the amount and composition of current assets that will afford business agility and flexibility to manage unanticipated changes in the business environment.

7.2.3 Optimal level of working capital

The optimal level lies where the business maintains an efficient mix of WC components to strike a balance between trade risk and return. Various food, electronics, and retail companies were on the brink of financial ruin, fuelled by the rising cost of money, high warehousing costs and loss from delinquent account receivables (Meyersiek, 1981). Yet, inadequate WC saw the South African national carrier (SAA) placed under voluntary business rescue in 2019 to salvage the airline after a decade of failure to

generate cash (Wasserman and Cronje, 2019). Several global corporate collapses were attributed to poor WC performance.

This theme discusses why holding high working capital levels is costly and ways of reducing current assets to release funds tied up in the WC. It provides structured guidance in setting the right level of working capital. At the appropriate level of WC, a company can generate adequate liquidity to sustain daily operations and even achieve profitability.

7.2.4 Trade-off: Liquidity – profitability relationship

Liquidity and profitability are dual goals of the WCM function, and undue focus on one affects the other negatively. Every business must meet its maturing financial obligations and yet generate sufficient profit to create business value for long-term survival. This theme addresses Smith's (1973) call that these should be balanced against each other by considering the trade-offs inherent in WCM policies.

Focus is therefore placed on creating an efficient operating cycle to increase positive cash flows. The resultant short cash conversion cycle (CCC) leads to a higher net present value of cash flows generated by assets, thereby increasing business value. The increased positive cash flows will reduce reliance on external finance and increase profitability due to the low net cost of WC associated with the shortened operating cycle.

This theme addresses the research question, 'How can the working capital needs be balanced?' The five (5) constituent codes demonstrate the important relationship between improved cash flows and profitability for overall business performance.

As discussed in the next section, the themes were then depicted in a model which enabled the researcher to demonstrate these and their interrelationships more clearly and easily than a verbal description, enhancing the understanding of the WC phenomenon.

7.2.5 Final model as an original extension of knowledge

The model comprises four (4) themes which are interconnected principles that, in a concerted fashion, create a guiding framework to systematise the decisions and actions of product line managers in achieving the dual goals of WCM. This represents

the study’s contribution to the theory of the WC phenomenon aimed at improving WC performance.

The model's effectiveness was verified by financial management practitioners, who also made suggestions to refine it. The two focus groups recommended that interpersonal/soft skills should be added to the model to facilitate the collaborative management approach. It was believed that effective skills could strengthen inter-organisational networks and build effective SC relationships focusing on a win-win situation. The researcher, therefore, added the interpersonal skills dimension as the fourth code of the Collaborative management theme to finalise the model.

7.3 CONCLUSIONS

The model comprehensively addressed the research problem by answering all research questions.

> How could the management of working capital be systematised so that companies can manage WC well?

The four (4) interlinked themes coherently create a guiding framework to manage working capital. The model effectively systematises WC management, as confirmed by the financial management practitioners who exercise authority in WC management decisions. The practitioners further expressed willingness to host the field test of this practical intervention in the company.

This broad question was further expressed through the following sub-questions:

> How can the underlying drivers of working capital be determined?

The theme Determinants of working capital captures both endogenous and exogenous factors that impact the level of WC. The grasp of WC determinants will allow businesses flexibility and agility to sustain daily operations and navigate the fluid business environment.

> Is there a right level of working capital?

The model defines the optimal level of WC to lie at the point of balance between trade risk and efficiency (positive return). At this level, the company could generate adequate cash flows to maintain business activities and even derive profitability. The right level

aligns with the corporate strategy, and such goal congruency enables the company to achieve the dual goals of liquidity and profitability and thereby maximise business value in the long term.

How can the working capital needs be balanced?

The strategic alignment of decisions and actions of managers regarding current assets and current liabilities enables the business to achieve both goals of WC management, that is, liquidity and profitability. This alignment would be underpinned by the recognition of business-wide factors that determine the company's WC needs, which is central to setting the appropriate level of WC.

In addressing the research questions, the researcher effectively achieved the objective "To develop a conceptual model for managing working capital optimally". The practitioners' assertions that the model is *"[A]ll encompassing. Covers all influences, (the) key drivers"; "everything that affects WC is here"* all confirm the achievement/ realisation of the research objectives.

The inherent weaknesses and deficiencies of the accounting concept of WC in measuring WC performance guided the exploration of the ability to generate cashflows holding minimal WC level as landmarks in optimising WC management (Conceptual Framework: Figure 2.2). However, the thematic data analysis approach, which included focus groups' data, ensured that the research questions were all answered through the emergent themes and mitigated against over-reliance on the selected framework.

7.3.1 Implications for the body of knowledge on WC

The following are various contributions that the study made to the limited research on WCM (research gap):

7.3.1.1 Theoretical implications

WC performance metric

The focus of WC performance should be the ability of the company to generate adequate cash flows to settle due financial obligations internally. It is superior to the traditional financial ratios (current and quick ratios) as liquidity indicators. A short cash conversion cycle (CCC) is valuable as it leads to a higher net present value of cash

flows generated by assets, thereby increasing business value. As depicted in the Conceptual Framework (Figure 2.2), the traditional ratios and liquidation perspective should be disregarded in evaluating financial performance as it is the generation of cash flows and holding a minimal WC level that will achieve optimal WC performance.

Design principles (usable knowledge)

The design-based research (DBR) approach derived design principles and created usable knowledge about these that stand to enhance research in WC management through the following:

- Giving insights and broadening the understanding of the role and underlying drivers of WC
- Providing the basis for determining the underlying drivers of WC and thereby facilitating setting the optimal (most appropriate) level of WC
- Extending the theory of WC.

The provision of extensive contextual information that enables readers to draw relevant insights extends the theory of WC. This is the strength of DBR: to develop an effective intervention to either resolve a specific problem or improve local practice in general (Anderson and Shattuck, 2012).

7.3.1.2 Methodology implications

Integrated research approach

The study adopted a qualitative research inquiry to illuminate the meaning managers accord to the WC phenomenon; that is, what informs management's decisions and behaviour regarding the investment in WC. This approach, therefore, demonstrated the almost seamless intersection and co-existence of the positivist view and social constructivism, which enabled knowledge to move back and forth along the resultant continuum.

The decision to adopt a qualitative research approach flowed from the recognition that the phenomenon of WC is a behavioural process that is more intuitive than rational. This was despite the nature of the domain of financial management, which seeks to maximise wealth through maintaining a balance between risk and profitability.

Knowledge was also created through inductive and deductive stances resulting in a back-and-forth shuttling between data and theory, known as abduction. The mapping of these conceptual domains created the research contribution.

7.3.1.3 Practical implications

In systematising the management of WC, the model broadens the understanding of this social phenomenon and thereby improves financial performance. The interconnected principles collectively provide guidance to determine the underlying business-wide factors of WC and set the optimal level of working capital. The model facilitates strategic alignment by orienting the decisions and actions of managers regarding current assets and liabilities towards achieving the corporate strategy.

Readers can draw relevant insights from the extensive contextual information to adjust the context and the model to maximise WC value in their settings. The meaning of the WC phenomenon is context-based, as companies operate in a fluid business environment.

7.3.1.4 Strengths

This study developed an effective practical intervention in collaboration with WCM practitioners from JSE-listed entities to resolve a research problem identified during collaborative research inquiry discussions with the Gauteng banking industry. Data were gathered using different research methods to derive synergies from their strengths.

Design-based research

The design-based research exercise yielded both knowledge (design principles) and a product (intervention), which distinguish it from other forms of research. The design principles hold substantive and procedural knowledge about the model's effectiveness, enabling other readers to determine what insights are relevant to their settings. The cyclical and iterative nature of design research improved the quality of the intervention, rendering it usable to practitioners. The design principles were derived through a hybrid approach that included relevant and commonly used WC constructs and practitioners' expert knowledge and WCM experience.

Use of Concept Mapping and Focus Groups

The benefits of using concept mapping, including a clear audit trail (raw data, codes with data extracts and emerged themes) and determinable construct validity (codes of similar data extracts), all enhanced the rigour of this research. The use of ATLAS.ti supported the iterative process of knowledge management that derived information meaningfully to answer research questions. The WCM practitioners verified the model's effectiveness and provided suggestions to refine it.

Transferability

The property developer could draw insights relevant to their settings by understanding the design principles. The team asserted that *"…….it fits with our business model; confirms all the things that we battle with."*

This was despite the focus of the study being on the WC management function in the South African retail and consumer products industry, and the model was also favourably received by the second focus group. This underscores the focus of design-based research, replication logic, that multiple testing of design principles should produce the same results in different kinds of business endeavours (Yin, 2003).

7.3.1.5 Limitations

The data inquiry was largely driven by the researcher's interpretation of the literature, drawn from his technical knowledge and personal experience. Some initial analytic thoughts could introduce a level of bias. However, the validation of the initial model by practitioners drawing from their assumptions, perceptions and understanding of WCM mitigated this potential threat to the quality of the model.

The study's rigour was further enhanced by the audit trail (raw data, codes with data extracts, and emerged themes) inherent in concept mapping. The researcher employed a consultant in qualitative research methods, specifically ATLAS.ti, to ensure the transferability of the data presented in this study.

7.3.2 Directions for future research

Considering the study stance that the collaborative management approach sets the tone for this behavioural process and provides an umbrella to cover the other three

themes, there is scope for further studies to explore ways to improve the operational efficiency to strengthen the entire inter-organisational network competitiveness.

The two focus groups strongly maintained that interpersonal/soft skills are key ingredients to facilitate the collaborative management approach. It was mentioned by the several companies that undertook current asset reduction programmes that a continuous flow of information at all organisational levels motivated employees to perform better. Further research inquiry is recommended into the development and role of interpersonal skills to accelerate the flow of information in the whole supply chain. Effective communication will assist the practitioners in bridging the gap between network companies and other stakeholders.

The financial management practitioners – the experts knowledgeable about the WC phenomenon endorsed the relevance and sustainability of the model - its expected effectiveness. There is an opportunity for the field test of the conceptual model to test its actual effectiveness.

The study findings include companies with outward-looking practices which resonate with the assertion that "*I am because of others" (ubuntu).* One example given is Unilever, a consumer products international company, which has a practice of arranging with their financial service provider to grant independent tea suppliers in Kenya access to credit at its borrowing rate to lower the WC levels in the whole supply chain.

There is a significant growing trend to use supply chain finance to benefit suppliers in the network and stabilise the whole SC(PwC, 2018).

These outward-looking practices underscore the potential value of engendering *ubuntu* in business performance. Furthermore, they demonstrate Rausch's (2010) assertion that managers consider multiple values when making decisions and may work to achieve organisational needs. This is in sharp contrast to calls for monitoring managers against self-motivated behaviour. The practice of *Ubuntu* would achieve the following benefits:

- The ceasing of self-serving practices that force other members out of business. These are often small, vulnerable players that are financially distressed and without access to credit.

- The practice would yield lower operating costs in the network, rendering it more competitive than rival networks, a win-win situation for all the network members.
- It would strengthen trust and power-sharing in the inter-organisational network.

The practice of *ubuntu* can positively influence the decision-making and behaviour of managers beyond the dualities of shareholders versus stakeholders or even single goal versus multiple goals (Table 2.1). The practice builds on (Pietsch, 2016b) findings that humans have the cognitive ability to recognise when their actions will impact negatively on others' utility and are favourably disposed towards cooperation.

Ubuntu would motivate managers to work from a sense of duty when confronted with conflicting claims of other stakeholders and/or conflict between individual and others' claims. As corporate managers hold contractual relationships with all stakeholder groups of a company, they should make decisions in the best interests of all stakeholder groups (Rausch, 2010b). They should look beyond corporate profitability and serve the public good in society.

The evidence of doing good practices presents opportunities for investigating the concept of *ubuntu* within the realm of financial management.

7.3.3 Research ID reflection

The researcher successfully employed an integrated methodology to build a conceptual model to improve the management of WC in the retail industry sector. This methodology catered for the behavioural nature of decision-making by the WCM practitioners and their quest to maintain a balance between risk and profitability. This methodology involved and facilitated the intersection of two (2) worlds, namely, the positivist view and social constructivism. The back-and-forth shuttling between data and theory (abduction) created knowledge in the form of design principles and the tangible outcome, the practical intervention to address the WCM gap.

I now consider myself a bricoleur who effectively collaborated with practitioners, concept mapping through the ATLAS.ti and formative evaluation by focus groups to develop a practical solution guided by the design-based research approach. This underscores my earlier contention that it would be difficult to limit what I do or think to a philosophical lens. The bricoleur makes do with whatever tools and materials are at

their disposal. The study stance that the collaborative management approach provides the umbrella to cover the other three themes supports my assertion: multiple perspectives are the cornerstone of organisational dynamics. They should be harnessed to maximise business value.

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APPENDIX A: FOCUS GROUP QUESTIONS

APPENDIX A

FOCUS GROUP: CONCEPTUAL MODEL FOR MANAGING WORKING CAPITAL OPTIMALLY

CATEGORIES OF QUESTIONS ***(Krueger 2002:1-18)***

Opening [ice breaker]

1. *Please tell us your name and what you most enjoy doing when not managing corporate finance*

Introductory [allow participants to reflect on their experiences with the topic to give us hints about participants' reality]

1. *When you hear the words "working capital", what comes to mind?*

Transition [setting the stage for "Key" questions]

1. *Tell us about the skills that this function requires*

Key [to drive the topic]

1. What did you think about the proposed model?
2. What do you like best about it?
3. Think back when you started in this role, tell me about the things you tried to do but discontinued; the changes you tried to make but were not successful.
4. What role did others have in your success?
5. What helped you continue with the change?

Ending [questions to wrap up the discussions]

- **All-Things Considered questions** [each participant reflects on previous comments and identify the most important aspects that need action]

1. *Jot down on a piece of paper one phrase/sentence that best describes your position on this topic*
2. *Of all the aspects we discussed, which one is most important to you?*

- ***Summary question*** [Moderator recaps the discussions, state big questions & big ideas that emerged]

Briefly state common themes; acknowledge contrasting points of view,

1. *Did I correctly describe what was said?*
2. *Have we missed anything?*

APPENDIX B: PARTICIPANT INFORMATION SHEET

Graduate School of Business Leadership, University of South Africa PO Box 392 Unisa 0003 South Africa
Cnr Janadel & Alexandra Avenue Midrand 1685 Tel: +27 11 652 0000 Fax: +27 11 652 0299
Email: sbl@unisa.ac.za Website: www.sblunisa.ac.za

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: **2019_CAS_037**
Research permission reference number:

22 April 2021

Title: A Conceptual Model to Manage Working Capital Optimally

Dear Prospective Participant

My name is Andile Nobatyi and I am doing research with Professor HM van der Poll, an (*acting*) Academic Director in the School of Business Leadership, towards a PhD (Accounting Sciences) at the University of South Africa. We are inviting you to participate in a study entitled "*A Conceptual Model to Manage Working Capital Optimally*".

WHAT IS THE PURPOSE [including benefits] OF THE STUDY?

This study seeks to develop a conceptual model to manage working capital optimally. Such model will provide guidance on determining the appropriate level of working capital and thereby set the optimum level of working capital. An appropriate level of working capital could help achieve a balance between risk and return, meaning that there will be adequate liquidity to sustain daily operations, yet deriving profitability, achieving the dual goals of working capital management. Managers spend most of their time in managing working capital because it is significant in business as, current assets constitute more than 50% of total assets.

WHY AM I, BEING INVITED TO PARTICIPATE?

You are currently part of the working capital management team and hold decision-making authority over working capital matters.

This study will benefit from your wealth of experience as practitioners of financial management. Your contact details were requested and obtained from the Financial Director: PnP Retail Division This focus group will include the Financial Director, Head: Risk & Treasury, and Head: Working Capital Management.

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WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves a focus group to provide their perceptions and impressions of the proposed model to manage working capital. Participants will initially be provided with the model at least two (2) weeks prior to the 1-*hour* long MS Teams session to familiarize themselves. You will then determine the extent to which the model is acceptable, and make suggestions, *if any*, to refine the model.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason.

ARE THEIR ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

Considering that any management activity is largely behavioural in nature, participants might experience discomfort in mentioning or explaining contextual decision-making, whether consciously or not. The researcher will take the following ethical measures to protect the participants from any psychological and confidentiality risks:

- The participants will give informed consent to participate in the research.
- They will be provided with a participant information sheet stating, clearly the purpose and methods of the study.
- They will participate voluntarily and may withdraw at any time during the study.

The researcher will protect the privacy of the participants and maintain confidentiality although the participants will know who took part in the focus group.

The focus group members will only provide commentary on the proposed model based on their professional competency and experience, and finally make suggestions to refine the initial model. The risk of harm or side-effects to the potential participants is therefore very negligible.

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WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and that no one, apart from the researcher and the study leader will know about your involvement in this research.

Only the researcher and the research supervisor will have access to the data, and they will sign a confidentiality agreement with respect to the collected data. Your answers may be reviewed by people responsible for making sure that research is done properly, including the members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records. A report of the study may be submitted for publication as a journal article and/or conference proceedings, but individual participants will not be identifiable in such a report.

While every effort will be made by the researcher to ensure that you will not be connected to the information that you share during the focus group, I cannot guarantee that other participants in the focus group will treat information confidentially. I shall, however, encourage all participants to do so. For this reason, I advise you not to disclose personally sensitive information in the focus group.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard / filing cabinet in the Department of Management Accounting, College of Accounting Sciences for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Although no personal information will be gathered from the participants, any sort of information/document(s) that identify the participants will be shredded.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no payment or reward offered, financial or otherwise. Participants will not incur any costs incidental on their participation.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the Research Ethics Review Committee of the College of Accounting Sciences, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

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Email: sbl@unisa.ac.za Website: www.sblunisa.ac.za

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact the researcher Andile Nobatyi on 072 610 9558 or nobatae@unisa.ac.za.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Andile Nobatyi.

Should you have concerns about the way in which the research has been conducted, you may contact Prof van der Poll at vdpolhm@unisa.ac.za or 011-652 0255. Contact the research ethics chairperson of the CAS Research Ethics Review Committee, Prof L Erasmus at erasmlj1@unisa.ac.za or 012-429 8844 if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

ANobatyi

Andile Nobatyi CA(SA) RA

APPENDIX C: ETHICAL CLEARANCE CERTIFICATE

UNISA university of south africa

UNISA COLLEGE OF ACCOUNTING SCIENCES ETHICS REVIEW COMMITTEE

Date 2019-10-16

ERC reference :
2019_CAS_037
Name: A Nobatyi
Student/ Staff #: 06690696#

Dear Mr A Nobatyi,

Decision: Ethics Approval from
2019-10-16 to 2022-10-15

Researcher: A Nobatyi
nobatae@unisa.ac.za

Working title of research:

A CONCEPTUAL MODEL TO MANAGE WORKING CAPITAL OPTIMALLY

Qualification: PhD Accounting Sciences

Thank you for the application for research ethics clearance by the Unisa College of Accounting Sciences Research Ethics Review Committee. Ethics approval is granted for the period indicated above.

*The application for **conducting a focus group** was reviewed by the College of Accounting Sciences Research Ethics Review Committee, on **15 October 2019** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment, and approved.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Accounting Sciences Research Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

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4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date of this certificate.

Note:

The reference number of this certificate should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Prof L J Erasmus
Chair of CAS RERC
E-mail: erasmlj1@unisa.ac.za
Tel: 012 429 8844

Prof L Ntsalaze
Acting Executive Dean CAS

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APPENDIX D: THEME CODES DATA EXTRACTS FROM ATLAS.TI REPORT

Trade-off: Liquidity-profitability relationship

[Active: 5 Codes]:

1. **Operating cashflows - Automating operating systems improve cash management**

[9 Quotations]:

22:65 The combination of web-based technologies and supportive financiers en..... (19:423 [19:671]) - D 22: Supply chain WC management approach

The combination of web-based technologies and supportive financiers enables a supplier to get paid early without using the cash of the payer to make this early payment. At the maturity of the invoice, the payer reimburses the financier's advance

23:14 Provide a forecasting platform: Cash management remains a main concer..... (6:3337 [6:3469]) - D 23: The role of technology in cash liquidity WC

Provide a forecasting platform: Cash management remains a main concern for treasurers when allocating resources in an efficient way.

23:15 Integrate cash management transactions with basic trade management fu..... (6:3816 [6:3900]) - D 23: The role of technology in cash liquidity WC

Integrate cash management transactions with basic trade management functionalities:

23:16 savvy treasury departments continue to run projects aimed at improvin..... (5:979 [5:1110]) - D 23: The role of technology in cash liquidity WC

savvy treasury departments continue to run projects aimed at improving business processes integrated with existing IT applications

23:17 Accelerate payment processing and simplify financial transaction manag..... (6:640 [6:1038]) - D 23: The role of technology in cash liquidity WC

Accelerate payment processing and simplify financial transaction management through automation: One approach companies are using to improve their cash flow is enhancing accounts payable (A/P) and accounts receivable (A/R) practices, speeding up collections, exercising greater control over their disbursements, decreasing payment processing time and costs, and reducing errors and fraud risk.

23:18 Store and distribute payments and receivables data to be used for pro..... (6:1199 [6:1539]) - D 23: The role of technology in cash liquidity WC

Store and distribute payments and receivables data to be used for processing payments and share information with payment processing networks: The ever-more centralised nature of treasury requires the collection and distribution of sensitive transaction data, such as remittance and receipt data, within a single corporate repository.

23:19 Connect over the internet with cash management banks, other financial..... (6:1817 [6:1925]) - D 23: The role of technology in cash liquidity WC

Connect over the internet with cash management banks, other financial institutions, customers and suppliers:

23:20 Centralise and monitor business activity, avoiding the need to consul..... (6:2869 [6:2987]) - D 23: The role of technology in cash liquidity WC

Centralise and monitor business activity, avoiding the need to consult separate websites and transfer files manually:

34:26 It is important to employ business processes that span multiple depar..... (3:2135 [3:2480]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

It is important to employ business processes that span multiple departments and support these processes with specialized workflow-based technologies that enable

collaboration. A cash flow performance management solution identifies and track disputes, routes them to different departments and monitors any deviation to drive speedy resolution

2. Operating cashflows – Cash forecasting improves cash flows

[13 Quotations]:

5:1 Cash flow is the lifeblood of firms, and efficient working capital man…… (1:1769 [1:1889]) - D 5: CFO Magazine's WC Survey by Filbeck

Cash flow is the lifeblood of firms, and efficient working capital management is the key to achieving healthy cash flow

5:12 Separate analysis of the change in accounts receivable, change in ac…… (4:1465 [4:1804]) - D 5: CFO Magazine's WC Survey by Filbeck

Separate analysis of the change in accounts receivable, change in accounts payable, change in inventory, and other cash management related variables increased the sample firms' ability to predict future cash flows. In fact, these variables were more successful than several lags of aggregate earnings in predicting future cash flows

9:7 Cash holding allows the company to face its daily transactions, to me…… (3:1329 [3:1490]) - D 9: Effects of Capital Expenditure on WC management

Cash holding allows the company to face its daily transactions, to meet unpredicted eventualities or to undertake future investment opportunities (Keynes, 1936)

16:42 firms with volatile sales tend to rely on payables to enhance cash flo…… (4:655 [4:725]) - D 16: Net operating WC behaviour

firms with volatile sales tend to rely on payables to enhance cash flow

16:43 firms with more unpredictable revenues have greater difficulty foreca…… (4:521 [4:647]) - D 16: Net operating WC behaviour

firms with more unpredictable revenues have greater difficulty forecasting day-to-day liquidity needs and subsequent funding.

26:3 Basic to any successful program of money management is a cash flow sc..... (2:1144 [2:1284]) - D 26: Toward a theory of WC management by John Sagan

> Basic to any successful program of money management is a cash flow schedule or budget showing the movement of cash in and out of a company.

26:4 Sales and production plans are made. Costs are estimated. Into such a..... (2:1468 [2:1934]) - D 26: Toward a theory of WC management by John Sagan

> Sales and production plans are made. Costs are estimated. Into such a cash flow schedule are placed the plans for additions to fixed assets, for purchases of other firms, for dividend payments. Borrowings of several or all types might be contemplated as well as provision for repayment of debt. These analyses of cash flows may have one name or another. They may be formal or informal, but the result is to have developed a cash flow schedule or a cash budget.

26:9 the cash will be expended according to a time schedule as shown in a..... (4:101 [4:183]) - D 26: Toward a theory of WC management by John Sagan

> the cash will be expended according to a time schedule as shown in a cash forecast

26:12 When cash or bank balances reach some predetermined level, further in..... (6:47 [6:243]) - D 26: Toward a theory of WC management by John Sagan

> When cash or bank balances reach some predetermined level, further increases in cash are usually applied to reduce borrowings, or to purchase marketable securities as a temporary cash investment.

26:13 Any program for investing temporarily surplus cash must be based on t..... (6:246 [6:351]) - D 26: Toward a theory of WC management by John Sagan

> Any program for investing temporarily surplus cash must be based on the probable demands for those funds.

34:16 By tying together transactional data from receiva..... (2:2646 [2:2908]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

By tying together transactional data from receivables and payables, along with the ability to perform "what-if?" simulations of differing business conditions, treasury and finance groups can make optimal investment and borrowing strategies.

34:22 during the forecasting function, collaboration is required between tr..... (3:1853 [3:1973]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

during the forecasting function, collaboration is required between treasury, corporate finance and division managers.

34:25 Having a cash flow performance management platform serves multiple .... (3:2753 [3:3438]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

Having a cash flow performance management platform serves multiple purposes for corporations seeking to achieve working capital excellence.

First is the ability to apply proven best practices in credit, receivables and payables automation on a worldwide basis. Second, a flexible and collaborative platform will enable multiple departments to streamline cash flow and dispute resolution processes. Finally, having performance management capabilities, including predictive analytics and reporting, allows senior executives to gain insight into overall cash flow management and develop higher working capital efficiencies.

3. Operating cashflows - Decreasing DAR enhances cash flows

[6 Quotations]:

2:8 It represents the average number of days that it takes for a firm..... (4:3369 [4:3752]) - D 2: Cash turns WC management external finance

It represents the average number of days that it takes for a firm to collect payments on their credit sales.

There is a negative relationship between this figure and the enhancement in cash flows for the firm. The expectation is to see a trend where this ratio decreases over time, implying management's efficient use of its receivables and related credit policies.

5:4 The two primary concerns firms have regarding receivables are the lost..... (3:1298 [3:1434]) - D 5: CFO Magazine's WC Survey by Filbeck

The two primary concerns firms have regarding receivables are the lost cash flows arising from bad debts and from administrative costs.

5:5 All methods employed by firms to control accounts receivable increase..... (3:2442 [3:2581]) - D 5: CFO Magazine's WC Survey by Filbeck

All methods employed by firms to control accounts receivable increase administrative costs and, if not successful, hurt the bottom line

5:10 Firms have been accelerating collections both in the determination of..... (4:352 [4:545]) - D 5: CFO Magazine's WC Survey by Filbeck

Firms have been accelerating collections both in the determination of the payment due date and in using concentration banking, lockboxes, electronic payments, and other means in recent years

26:8 Often changes in billing methods or billing dates will lower the total..... (3:884 [3:1180]) - D 26: Toward a theory of WC management by John Sagan

Often changes in billing methods or billing dates will lower the total of receivables outstanding, and cash is accordingly increased. Similarly, an analysis of payables could result in a better utilization of available discount periods, and immediate cash needs may accordingly be deferred.

26:17 Similarly, an analysis of payables could result in a better utilization..... (3:1020 [3:1180]) - D 26: Toward a theory of WC management by John Sagan

Similarly, an analysis of payables could result in a better utilization of available discount periods, and immediate cash needs may accordingly be deferred.

4. Operating cashflows - Increasing inventory turnover improves cash inflow

[2 Quotations]

2:7 A decrease in the DINV is an improvement in the time that inventor..... (5:421 [5:835]) - D 2: Cash turns WC management external finance

A decrease in the DINV is an improvement in the time that inventory is held and helps to curb stale or obsolete levels of inventory. It also represents an improvement in cash inflow from the sale of inventory. An increase is a deterioration of the situation. The expectation over the time period is that firms make an effort to control their monetary commitment for this critical current asset

5:3 Nike CEO Philip Knight singled out inventory as the most important issue..... (2:1042 [2:1603]) - D 5: CFO Magazine's WC Survey by Filbeck

Nike CEO Philip Knight singled out inventory as the most important issue on which Nike's long-term fate relies. He noted that in order "to protect margins and brand value, the company needs to manage its inventory better" (Fredeen, 2000). A 2004 Business Week cover story (Holmes and Bernstein, September 20, 2004) indicated that Nike had made significant changes by focusing on, as one Nike insider, Mark Parker, stated, "the basic pieces of the business: operating principles, financial management, supply-chain renovation, and inventory management

5. Operating cashflows - Shortening the CCC improves cash flows

[*8 Quotations*]

5:10 Firms have been accelerating collections both in the determination of..... (4:352 [4:545]) - D 5: CFO Magazine's WC Survey by Filbeck

> Firms have been accelerating collections both in the determination of the payment due date and in using concentration banking, lockboxes, electronic payments, and other means in recent years

5:13 mid-2000 decline of Amazon.com's stock price. In June 2000 (Ames and..... (2:98 [2:397]) - D 5: CFO Magazine's WC Survey by Filbeck

> mid-2000 decline of Amazon.com's stock price. In June 2000 (Ames and Wolverton, June 23, 2000) an influential Lehman Brothers Inc. bond analyst Ravi Suria issued a stern warning about Amazon.com's "weak balance sheet, poor working capital management, and massive negative operating cash flow.

5:14 Nike had made significant changes by focusing on, as one Nike insider..... (2:1379 [2:1604]) - D 5: CFO Magazine's WC Survey by Filbeck

> Nike had made significant changes by focusing on, as one Nike insider, Mark Parker, stated, "the basic pieces of the business: operating principles, financial management, supply-chain renovation, and inventory management.

5:15 Improving collection practices, inventory controls, and trade credit..... (4:2396 [4:2548]) - D 5: CFO Magazine's WC Survey by Filbeck

> Improving collection practices, inventory controls, and trade credit practices are beneficial for the company, the firm's lenders, and their investors.

11:13 A firm that minimizes its cash conversion cycle also minimizes its n..... (1:2688 [1:2863]) - D 11: Great recession effects WC management

A firm that minimizes its cash conversion cycle also minimizes its needs for net working capital, which, as already stated, is costly and affects the firm's cost of capital

22:89 An essential lever to reduce tied up working capital is the elimination..... (4:1747 [4:1954]) - D 22: Supply chain WC management approach

An essential lever to reduce tied up working capital is the elimination of non-value-adding time (Christopher and Ryals 1999). The indicator to measure how long cash is tied up between procurement and sales

22:90 By embracing all the sub-cycles of the C2C cycle, the enhanced view re..... (5:1925 [5:2092]) - D 22: Supply chain WC management approach

By embracing all the sub-cycles of the C2C cycle, the enhanced view recognizes that the drivers of C2C performance are more often operational in nature than financial

26:8 Often changes in billing methods or billing dates will lower the total..... (3:884 [3:1180]) - D 26: Toward a theory of WC management by John Sagan

Often changes in billing methods or billing dates will lower the total of receivables outstanding, and cash is accordingly increased. Similarly, an analysis of payables could result in a better utilization of available discount periods, and immediate cash needs may accordingly be deferred.

Determinants of working capital

[Active: 5 Codes]:

1. **Access to credit influences working capital management**

[9 Quotations]:

16:7 As discussed by Atanasova (2007) and shown by Molina and Preve (2009),..... (2:227 [2:450]) - D 16: Net operating WC behaviour

As discussed by Atanasova (2007) and shown by Molina and Preve (2009), most firms supply and demand trade credit simultaneously; firms with better access to trade credit find it easier to finance receivables and inventory.

16:18 Creditworthy firms with superior capital market access are more capable..... (4:3307 [4:3426]) - D 16: Net operating WC behaviour

Creditworthy firms with superior capital market access are more capable of financing the working capital gap externally

16:45 Whited (1992) finds that larger firms face fewer borrowing constraints..... (5:661 [5:802]) - D 16: Net operating WC behaviour

Whited (1992) finds that larger firms face fewer borrowing constraints than smaller firms since the former have better capital market access

16:46 larger firms find it easier to finance relaxed credit and inventory policies..... (5:397 [5:654]) - D 16: Net operating WC behaviour

larger firms find it easier to finance relaxed credit and inventory policies, smaller firms are less able to issue commercial paper or negotiate lines of credit. With fewer ways to finance receivables, smaller firms rely on factoring more than large firms

16:48 Molina and Preve (2009) demonstrate that financially distressed firms..... (5:3438 [5:3602]) - D 16: Net operating WC behaviour

Molina and Preve (2009) demonstrate that financially distressed firms have significantly reduced levels of trade credit relative to their non distressed counterparts

16:49 Distressed firms have limited financial slack and cash generating ability..... (5:3120 [5:3436]) - D 16: Net operating WC behaviour

Distressed firms have limited financial slack and cash generating ability, and the strain of financial distress may cause firms to reduce investment in operating working capital by collecting on receivables, tightening credit terms, liquidating existing inventory, and stretching credit terms granted by suppliers.

16:56 firms with weaker internal financing ability, limited capital market..... (21:1962 [21:2153]) - D 16: Net operating WC behaviour

firms with weaker internal financing ability, limited capital market access, and greater costs of external financing will more aggressively use payables relative to receivables and inventory

33:7 George Cassidy [3], for example, recommends several guidelines for co..... (3:2723 [3:3071]) - D 33: WC practices by Japanese firms in US

George Cassidy [3], for example, recommends several guidelines for companies to develop capitalization strategies for overseas projects. In his view, the investor's own resources should be sufficient to approximately cover the project investment in fixed assets. Outside financing should support investment in net working capital of the unit.

33:8 most important objective of working capital management by Japanese in..... (4:2984 [4:3161]) - D 33: WC practices by Japanese firms in US

most important objective of working capital management by Japanese investors was to provide various current assets and short-term credit necessary to support anticipated sales.

2. WC Determinants - Industry-type influences working capital management

[5 Quotations]:

16:53 Firms in concentrated industries have improved negotiating ability; thus..... (17:3642 [17:3759]) - D 16: Net operating WC behaviour

Firms in concentrated industries have improved negotiating ability; thus, they are able to dictate trade credit terms

16:54 granted and received, and inventory policies (18:43 [18:86]) - D 16: Net operating WC behaviour

granted and received, and inventory policies

36:24 Businesses with significant exports are expected to maintain longer pipelines..... (7:1731 [7:2460]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Businesses with significant exports are expected to maintain longer pipelines carrying raw material and work-in-process inventory, and perhaps to maintain part of their

production operations in foreign countries. In addition, the collection cycle is expected to be lengthened by complications caused by distance as well as host country payment procedures. Similarly, businesses with significant imports are expected to be dependent on long supply pipelines and, therefore, to carry greater transit inventories. Larger raw material buffer inventories could also be anticipated due to the increased risk of supply interruptions. In conclusion, Working Capital/Sales should be positively related to Industry Exports and Imports.

36:26 Businesses that are export or import oriented tend to use more working capital..... (8:808 [8:928]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Businesses that are export or import oriented tend to use more working capital, as do those in concentrated industries

36:53 I t is expected that the more concentrated the industry, the greater it..... (7:2462 [7:3016]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

It is expected that the more concentrated the industry, the greater the oligopolistic coordination possible (through price leadership for example). Businesses operating under such oligopolistic conditions can be expected to maintain a higher ratio of price to marginal cost than would evolve under more competitive circumstances [12] . The more price exceeds marginal cost, the greater the benefits from carrying inventory relative to the cost and the more sensible it is to avoid shortages and dissatisfied customers by holding additional inventory

3. WC Determinants - Large market share derives working capital related economies of scale

[8 Quotations]:

16:23 Overall, we expect firms with greater negotiating power to have more payables..... (5:2486 [5:2670]) - D 16: Net operating WC behaviour

Overall, we expect firms with greater negotiating power to have more payables, fewer receivables, and less inventory. That is, the net impact of increased market power is a reduced WCR.

16:47 firms with greater market share can stretch the credit terms offered..... (5:1385 [5:1687]) - D 16: Net operating WC behaviour

firms with greater market share can stretch the credit terms offered by suppliers with little repercussion as contracts with industry leaders are critical to the viability of smaller suppliers. Similarly, strong relationships with vendors allow firms with greater market power to hold less inventory

36:13 Thus high share businesses should be better able to negotiate deliver..... (6:2293 [6:2501]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Thus high share businesses should be better able to negotiate delivery schedules that mesh smoothly with their production requirements, shifting part of the raw material inventory burden to their suppliers.

36:33 The larger a business's share of its served market relative to the share..... (6:1978 [6:2131]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

The larger a business's share of its served market relative to the shares of competitors, the greater its natural advantages in both buying and selling.

36:34 In purchasing raw materials, high share businesses can bargain more effectively..... (6:2132 [6:2291]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

In purchasing raw materials, high share businesses can bargain more effectively than their lower share competitors due to the larger scale of their purchases.

36:35 On the selling side, the higher a business's market share, the strong..... (6:2503 [6:2708]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

On the selling side, the higher a business's market share, the stronger its market position vis a vis its lower share competitors and the less the need to use credit and quick delivery as selling tools.

36:36 the more unstable a business's market share, the less secure its niche..... (6:2729 [6:2962]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

the more unstable a business's market share, the less secure its niche in the served market; hence the less certain the business can be that current customers will remain loyal, or that potential customers will choose its product(s).

36:37 Under such uncertain conditions, an incentive exists for using generous..... (6:2965 [6:3159]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Under such uncertain conditions, an incentive exists for using generous credit and quick delivery in an effort to keep current customers loyal and as a means of attracting potential purchasers.

4. WC Determinants - Production-related variables influence working capital

[9 Quotations]

36:41 Small batch production normally requires skilled, highly technical lab..... (4:909 [4:1043]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Small batch production normally requires skilled, highly technical labor inputs, hence a relatively long work-in-process (WIP) cycle.

36:42 continuous process operations involve a relatively short WIP cycle because..... (4:1070 [4:1226]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

continuous process operations involve a relatively short WIP cycle because a given level of in-process inventory is utilized 24 hours a day, 7 days a week.

36:43 Working Capital/Sales to be positively associated with % Small Batch Production..... (4:1251 [4:1388]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Working Capital/Sales to be positively associated with % Small Batch Production and negatively related to %Continuous Process Production.

36:44 As the %Capacity Utilized increases, economies are possible because the..... (4:1483 [4:1665]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

As the %Capacity Utilized increases, economies are possible because the level of work-in-process inventory can remain fairly constant while sales increase in proportion to capacity.

36:45 higher % Order Backlogs create pressures to produce more despite capacity..... (4:1818 [4:2053]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

higher % Order Backlogs create pressures to produce more despite capacity limitations. These pressures commonly cause production lead times to increase [20] , thereby lengthening the WIP cycle as well as increasing raw material levels

36:46 The more capital intensive the operation, the more costly are drops in capacity..... (4:2169 [4:2503]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

The more capital intensive the operation, the more costly are drops in capacity utilization because high relative fixed costs are spread over fewer units. Therefore, capital intensive businesses have an incentive to maintain level production during slack periods and to absorb the concurrent increase in inventory relative to sales

36:47 Working Capital/Sales are expected to be inversely related to %Capacity..... (4:2518 [4:2673]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Working Capital/Sales are expected to be inversely related to %Capacity Utilization and positively linked to both % Order Backlog and Capital Intensity.

36:48 Products that are made-to order can generally be shipped to customers..... (4:2818 [4:2963]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Products that are made-to order can generally be shipped to customers upon completion, thereby eliminating the need for finished goods inventory.

36:49 The greater the relative breadth with respect to sizes, colors, finis..... (4:3074 [4:3335]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

The greater the relative breadth with respect to sizes, colors, finishes, flavors, etc., the larger the raw material and work-in process buffer stocks necessary to support production, and the greater the finished goods buffer stocks needed to service customers.

5. WC Determinants - Sales-related variables influence working capital

[8 Quotations]:

16:58 finding that firms tighten their credit policy as they achieve planned..... (14:50 [14:228]) - D 16: Net operating WC behaviour

finding that firms tighten their credit policy as they achieve planned levels of sales growth. Further, this result suggests that prior period sales growth provides net financing

16:59 payables are directly correlated with growth as suppliers are willing..... (14:300 [14:548]) - D 16: Net operating WC behaviour

payables are directly correlated with growth as suppliers are willing to offer more credit with better terms to high-growth firms in hopes of building relationships. High-growth firms need not relax trade credit terms as sales are already growing

16:60 negative correlation between the WCR and sales growth (12:3284 [12:3336]) - D 16: Net operating WC behaviour

negative correlation between the WCR and sales growth

16:62 The results further reiterate the aforementioned result and accompanying..... (14:3379 [14:3621]) - D 16: Net operating WC behaviour

The results further reiterate the aforementioned result and accompanying theory as firms with lagged positive sales growth reduce their investment in net operating working capital, while negative sales growth has a positive effect on the WCR

36:40 the higher the level of Media Advertising/Sales, the greater the brand..... (5:1323 [5:1750]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

the higher the level of Media Advertising/Sales, the greater the brand loyalty induced and the larger the proportion of a business's sales that are "captive." By "capturing" sales through media advertising, the business gains a selling advantage over competitors and can reduce its use of credit and quick delivery as selling tools. Thus Working Capital/Sales is expected to be negatively related to Media Advertising/Sales.

36:50 Pressures exerted by salesmen on the finance group and on the product..... (5:1998 [5:2215]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

Pressures exerted by salesmen on the finance group and on the production group for more generous credit and for quicker, more dependable shipments respectively are expected to lead to increased working capital levels

36:51 pressures to ship quickly and to provide ample credit combine to increase..... (5:2787 [5:2891]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

pressures to ship quickly and to provide ample credit combine to increase the level of working capital.

36:52 the higher a business's selling price relative to the prices of competition..... (7:957 [7:1229]) - D 36: Nunn-1981-Journal_of_Financial_Research - Copy

the higher a business's selling price relative to the prices of competitors, the greater its relative profitability of sales. Consequently, the stronger its incentive is to use

generous credit as a means of attracting new customers and of keeping current customers loyal.

Optimal level of working capital

[*Active: 3 Codes*]

1. Optimal level - Holding high levels of working capital is costly

[10 Quotations]

3:4 into account other elements such as insurance, inventory losses, ... (2:1 [2:225]) - D 3: Cashing in on WC by Meyersiek

into account other elements such as insurance, inventory losses, losses from bad debts, obsolescence and inventory carrying costs, the effective cost of working capital can easily amount to 30 percent per year or more.

3:38 The problem of high levels of working capital has gained real urgency..... (1:1682 [1:1941]) - D 3: Cashing in on WC by Meyersiek

The problem of high levels of working capital has gained real urgency in the past few years through the rising cost of money.

With compensating balances of 20 percent, a 20 percent prime rate translates into an effective financing cost of 25 percent. Taking

3:41 functional executives responsible for purchasing, production, distribution..... (3:2196 [3:2606]) - D 3: Cashing in on WC by Meyersiek

functional executives responsible for purchasing, production, distribution and sales, who have an inherent tendency toward higher inventories and receivables: sales are worried about possible stockouts and favor a broad product range; production tries to increase capacity utilization and contributes, with its preference for lower changeover times and higher production runs, to larger average inventory

5:7 The rationale behind the survey's launch is that effective working capital..... (5:1998 [5:2314]) - D 5: CFO Magazine's WC Survey by Filbeck

The rationale behind the survey's launch is that effective working capital policies may offer firms a competitive advantage. CFO Magazine points out that every dollar locked up in working capital weighs down performance; but once unlocked, each dollar supports investment and value creation now and in the future.

6:2 Boyle and Guthrie (2003) also confirm that firms are unable to under..... (1:2043 [1:2225]) - D 6: Corporate investments and WC

Boyle and Guthrie (2003) also confirm that firms are unable to undertake profitable projects when sufficient amount of internal funds, in terms of liquidity, is not available.

6:21 use of internally generated funds for corporate investment has "a co..... (1:1897 [1:2041]) - D 6: Corporate investments and WC

use of internally generated funds for corporate investment has "a cost advantage" over the funds collected externally from capital markets.

6:22 liquidity which shows the ability of a firm "to take advantage of fa..... (2:1604 [2:1982]) - D 6: Corporate investments and WC

liquidity which shows the ability of a firm "to take advantage of favourable discounts or profitable business opportunities as they come into being" (Wang, 2002, p 159). The greater the firm's investment in current assets, the greater is the liquidity, and the greater the reliance on current liabilities the lower is the liquidity of the firm (Keown et. al., 2001)

6:23 funds collected internally have lower costs than those collected e..... (3:887 [3:1215]) - D 6: Corporate investments and WC

funds collected internally have lower costs than those collected externally (eg., Cleary, 1999; Smith, 1986; Boyle and Guthrie, 2003), mainly because of the costs associated with external sources due to market imperfections (eg., out of-pocket expense to issue securities, agency and adverse selection) (Smith, 1986).

6:24 Cleary (1999, p. 673) argues that the use of internally generated..... (1:1856 [1:2040]) - D 6: Corporate investments and WC

Cleary (1999, p. 673) argues that the use of internally generated funds for corporate investment has "a cost advantage" over the funds collected externally from capital markets

11:12 All else being equal, the higher the values for DIH and DSO, the higher..... (1:2375 [1:2495]) - D 11: Great recession effects WC management

All else being equal, the higher the values for DIH and DSO, the higher the firm's investment in its net working capital

2. Optimal level - Reducing current assets to release hidden funds

[9 Quotations]

3:19 In the inventory portion of current assets, two objectives have to..... (6:1128 [6:1372]) - D 3: Cashing in on WC by Meyersiek

In the inventory portion of current assets, two objectives have to be met: matching the levels of inventory items with the volume of expected demand, and periodically controlling the existing inventory for " d e a d" or obsolete items.

3:21 Time delays. In the case of working capital, time is quite literally..... (8:656 [8:1008]) - D 3: Cashing in on WC by Meyersiek

Time delays. In the case of working capital, time is quite literally money. Typically, the most unexpected improvements come from a comprehensive analysis of the time requirements for all individual stages from customer ordering to cash inflows. At each of these stages, shortening the time proportionally reduces current assets requirements.

3:46 Exhibit I Seeking out hidden resources Causes of inflated working..... (7:1 [7:1284]) - D 3: Cashing in on WC by Meyersiek

Exhibit I Seeking out hidden resources Causes of inflated working capital levels Examples of reduction suggestions Imbalance of inventory/ accounts receivable structure Reduce number of finished products Eliminate non usable portions of dispatch inventory Centralize portions of spare-parts inventory Scrap, rework or sell

off obsolete spare parts Standardize auxiliary materials and spare parts Reduce number of raw material specifications Reduce number of terms of payment and number of bank accounts Excessive time delays Reduce delays between individual stages of production Speed up invoicing Change to quicker instruments of payment Include due date on invoice Reduce "grace" period and increase reminder frequency Specify collection accounts Inadequacy of decision rules Reduce cumulative safety stocks Reduce lot sizes through complete incorporation of all bolding costs Update plan assumption for procurement Improve foreign exchange arrangements Unsatisfactory planning and control information Improve sales forecasting accuracy Improve due date and payment pattern information Improve quality of inventory records (e.g., to include early-warning signals for stockouts, numbers of months without movement, ratio of inventory to safety stocks)

27:66 Configuring the organisation to be better aligned to key customers and..... (8:2819 [8:3066]) - D 27: Unlocking value through WC management by Smid 2007

Configuring the organisation to be better aligned to key customers and suppliers means that there is a more fluid flow of goods, services, cash and information up and down the supply chain. This results in a win/win on capital and cost reduction,

34:8 Credit risk and receivables management functions have to be coordinated..... (1:2991 [1:3429]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

Credit risk and receivables management functions have to be coordinated, with the front-end credit evaluation properly limiting risk of bad-debt write-offs, while the back end collections have to be automated to accelerate customer payments. A 360- degree view of this process is vital to ensure that credit risk scores and profiles for specific customers are used to drive the appropriate collections approach.

34:11 The payables side of the equation needs to be strategically managed to..... (1:3954 [1:4137]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

The payables side of the equation needs to be strategically managed to take advantage of discounts where appropriate, while extending certain payments to non-strategic suppliers.

34:13 take a two-pronged approach to centralizing finance functions..... (2:370 [2:515]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

take a two-pronged approach to centralizing finance functions, along with leveraging third- party service providers

34:27 cash flow can be freed by streamlining receivables and payables processes..... (1:895 [1:971]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

cash flow can be freed by streamlining receivables and payables processes.

34:28 It is important to employ business processes that span multiple departments..... (3:2135 [3:2312]) - D 34: 7 Steps Working to Elevating Capital Performance By Veena Gundavelli (2006)

It is important to employ business processes that span multiple departments and support these processes with specialized workflow-based technologies that enable collaboration.

3. Optimal level - Setting the right level of working capital

[13 Quotations]

19:5 each company is different and establishing an optimal level of working..... (2:2786 [2:2991]) - D 19: Is there a right level of WC?

each company is different and establishing an optimal level of working capital has to take into account the company's strategy and appetite for inherent trade-offs involved in managing working capital.

19:7 The right level, or the level it should be at, is to be found between..... (3:472 [3:699]) - D 19: Is there a right level of WC?

The right level, or the level it should be at, is to be found between the current and could-be levels of performance with a company's appetite for improvement being the factor deciding where exactly the right level will be

19:8 The could-be level can be described as the level that a company could..... (3:718 [3:892]) - D 19: Is there a right level of WC?

The could-be level can be described as the level that a company could achieve, and may involve strategic and structural changes to terms, conditions and operating model.

19:52 Quantitative analysis m Benchmarking • Desktop analysis • In-depth..... (4:16 [4:91]) - D 19: Is there a right level of WC?

Quantitative analysis m Benchmarking • Desktop analysis • In-depth review

19:53 Qualitative assessment m Quality of people • Processes • Procedures..... (4:94 [4:201]) - D 19: Is there a right level of WC?

Qualitative assessment m Quality of people • Processes • Procedures • Cash mindset • Systems automation

19:54 Trade-off considerations • Cash 'appetite' • Strategic priorities (4:204 [4:270]) - D 19: Is there a right level of WC?

Trade-off considerations • Cash 'appetite' • Strategic priorities

19:55 analyse in detail the components of working capital and benchmark in..... (9:2001 [9:2114]) - D 19: Is there a right level of WC?

analyse in detail the components of working capital and benchmark internally and externally to isolate issues;

19:56 understand the business processes, systems, structures and people that..... (9:2118 [9:2253]) - D 19: Is there a right level of WC?

understand the business processes, systems, structures and people that really drive current performance — separate myth and reality;

19:57 identify the internal and external impediments to efficient cash flow..... (9:2257 [9:2328]) - D 19: Is there a right level of WC?

identify the internal and external impediments to efficient cash flow.

19:58 establish early agreement with stakeholders of success criteria and..... (9:2411 [9:2714]) - D 19: Is there a right level of WC?

establish early agreement with stakeholders of success criteria and targets; — prioritise work plans based on contribution to the success criteria; — ensure that actions taken meet the agreed business case criteria; — consistently measure performance and take corrective action where required.

19:59 identify 'quick-wins' and implement them (9:2795 [9:2836]) - D 19: Is there a right level of WC?

identify 'quick-wins' and implement them

19:60 overcome inertia through monitoring performance and publishing successes..... (10:17 [10:121]) - D 19: Is there a right level of WC?

overcome inertia through monitoring performance and publishing successes throughout the organisation;

19:61 Develop a shared view throughout the organisation; — identify an accountable..... (10:285 [10:579]) - D 19: Is there a right level of WC?

Develop a shared view throughout the organisation; — identify an accountable sponsor within the business who will lead the charge; — form a cross-functional team which is able to operate across and within all areas of working capital process; — drive change through cross functional teams

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Collaborating working capital management

[*Active: 3 Codes*]

5.3.1 Aligning operations with key customers and suppliers will improve working capital

[4 Quotations]

22:63 A precise enhancement of the supply chain-oriented perspective of work..... (18:5232 [18:5450]) - D 22: Supply chain WC management approach

A precise enhancement of the supply chain-oriented perspective of working capital management is to work with a service provider who bypasses the funding gap in order to solve the conflict between buyers and suppliers,

22:91 From a "network perspective," the C2C cycle of the companies with the..... (20:3277 [20:3526]) - D 22: Supply chain WC management approach

From a "network perspective," the C2C cycle of the companies with the lowest WACC will be extended while those companies with higher financing costs are relieved by a shortened C2C cycle.

Note that an adequate transfer system has to be installed

27:32 customers and suppliers can combine in their entering of new markets,..... (9:3321 [9:3518]) - D 27: Unlocking value through WC management by Smid 2007

customers and suppliers can combine in their entering of new markets, coordinated off-shoring and explore product development opportunities and condense launch times through selected shared R&D.

27:63 Greater alignment of processes provides a significant opportunity for..... (8:2064 [8:2647]) - D 27: Unlocking value through WC management by Smid 2007

Greater alignment of processes provides a significant opportunity for free cash flow and increased capital efficiency. Increased operational coordination between suppliers and customers can reduce costs dramatically. Joining up and streamlining systems, processes and organisations helps to eliminate unnecessary duplication, increase through-puts and improve flexibility. The standard interfaces of goods delivered/goods receipt, invoicing/invoice processing and collection/payment are likely to display both misalignment and duplication, resulting in increased WC balances.

5.3.2 Managing collaboratively - Information sharing increases net system benefits

[*10 Quotations*]

22:22 Challenges such as disconnected supply chain processes, excessive stocks..... (4:1084 [4:1460]) - D 22: Supply chain WC management approach

Challenges such as disconnected supply chain processes, excessive stocks caused by non-bridged interfaces, inadequate trade credit terms, and suboptimal loan decisions require higher working capital than necessary. While the latter two originate from the financial realm, connecting supply chain activities and reducing stock and inventory belong to the operating realm.

22:55 The advantage, however, for a supplier of rendering a partnership with..... (16:2245 [16:2761]) - D 22: Supply chain WC management approach

The advantage, however, for a supplier of rendering a partnership with the computer corporation is the previously mentioned exchange of information.

Through Dell's direct sales concept and information policy, affiliated suppliers have extremely timely and accurate knowledge about customer demand and preferences.

The suppliers are also able to reduce their inventory levels by much more precise demand forecasting. In this way, not only Dell, but also the suppliers, benefit from superior market knowledge.

22:62 It is the goal of collaboration to jointly create (shareholder) value..... (18:4488 [18:4838]) - D 22: Supply chain WC management approach

It is the goal of collaboration to jointly create (shareholder) value through means of planning, steering, and controlling the flow of financial resources on an interorganizational level. The sharing of information is critical at each stage in the cross-border movement of goods to ensure the transfer of title, risk mitigation, and timely payment

22:74 Supply chain relationships are based on power and trust. An uneven distribution..... (20:3532 [20:3728]) - D 22: Supply chain WC management approach

Supply chain relationships are based on power and trust. An uneven distribution of power between the supply chain members is likely to be the main hindrance to a collaborative C2C cycle solution.

22:92 Through Dell's direct sales concept and information policy, affiliated..... (16:2398 [16:2759]) - D 22: Supply chain WC management approach

Through Dell's direct sales concept and information policy, affiliated suppliers have extremely timely and accurate knowledge about customer demand and preferences. The suppliers are also able to reduce their inventory levels by much more precise demand forecasting. In this way, not only Dell, but also the suppliers, benefit from superior market knowledge.

27:27 The quality of the information given (in the form of a forecast) by..... (8:3231 [8:3317]) - D 27: Unlocking value through WC management by Smid 2007

The quality of the information given (in the form of a forecast) by a customer to the

company has a large bearing on the company's production levels and efficiencies.

27:31 next step is strategic coordination whereby new market development an..... (9:3045 [9:3275]) - D 27: Unlocking value through WC management by Smid 2007

> [The] next step is strategic coordination whereby new market development and product development opportunities are co-explored in order to achieve competitive advantage. This requires high levels of trust and operational integration.

27:32 customers and suppliers can combine in their entering of new markets,..... (9:3321 [9:3518]) **- D 27: Unlocking value through WC management by Smid 2007**

> customers and suppliers can combine in their entering of new markets, coordinated off-shoring and explore product development opportunities and condense launch times through selected shared R&D.

27:61 end user demand signals and planned order quantities are relayed to suppliers..... (9:2488 [9:2630]) - D 27: Unlocking value through WC management by Smid 2007

> end user demand signals and planned order quantities are relayed to suppliers up the chain. The sharing of information has no material cost

27:64 The sharing of information has no material cost (just the issue of trust..... (9:2583 [9:2656]) - D 27: Unlocking value through WC management by Smid 2007

> The sharing of information has no material cost (just the issue of trust)

5.3.3 Managing collaboratively - Integration of financial and operational parts increases value in the supply chain

[8 Quotations]

22:63 A precise enhancement of the supply chain-oriented perspective of work..... (18:5232 [18:5450]) - D 22: Supply chain WC management approach

A precise enhancement of the supply chain-oriented perspective of working capital management is to work with a service provider who bypasses the funding gap in order to solve the conflict between buyers and suppliers,

22:73 Internally, the optimal collaborative C2C cycle is the one that minimizes..... (20:3091 [20:3274]) - D 22: Supply chain WC management approach

Internally, the optimal collaborative C2C cycle is the one that minimizes the cost of tied up capital while maximizing the gains of received cash across all collaboration members.

22:75 Often in a supply chain, however, small suppliers face higher cost of..... (18:1203 [18:1570]) - D 22: Supply chain WC management approach

Often in a supply chain, however, small suppliers face higher cost of capital rates than powerful focal companies. So at the end, by putting inventory upstream in the supply chain, it costs extra money for the downstream network members. Not only are suppliers likely to raise prices, but the supply chain as a whole will still be carrying excess working capital

22:78 suppliers are eventually forced to include the cost of extended payment..... (1:2131 [1:2430]) - D 22: Supply chain WC management approach

suppliers are eventually forced to include the cost of extended payment terms in the cost of goods sold. Over the long-term, cost-shifting to suppliers will result in an overall higher cost of goods sold versus competitors who have established more collaborative practices in their supply chains.

22:85 we notice that a reduction in the inventory period has a positive effect..... (10:1550 [10:1925]) - D 22: Supply chain WC management approach

we notice that a reduction in the inventory period has a positive effect on the C2C cycle time, both from an individual as well as from a collaborative viewpoint. This implies that the supply chain parties should seek ways to reduce each member's

inventory period, which is the time between the receipt of goods and material and shipment of the finished products (DIH).

22:86 This is subject to operations technology and reasonable batch sizes,..... (10:1927 [10:2100]) - D 22: Supply chain WC management approach

This is subject to operations technology and reasonable batch sizes, just-in-time (JIT) approaches, build-to-order production, or balanced vendor-managed inventory concepts

22:87 the downside of operations management that overly focuses on batch production..... (10:2358 [10:2543]) - D 22: Supply chain WC management approach

the downside of operations management that overly focuses on batch production and economies of scale, disregarding the loss of shareholder value caused by overly long inventory periods

22:88 Here, it is the integration of the financial and operational parts of..... (10:2666 [10:2801]) - D 22: Supply chain WC management approach

Here, it is the integration of the financial and operational parts of the supply chain that creates the greatest value for its members

APPENDIX E: DATA SOURCE 1: FOCUS GROUP 1 DISCUSSIONS

FOCUS GROUP 1 DISCUSSIONS [Property developer]

Business model: Residential Property Development [10 000 – 12 000 units] built to government & private. Financing is project based; there is **central treasurer** where cash flow management is consolidated at company level. This affords the business flexibility to move funds across projects as required. Cash flows are tracked daily to derive a real time overview.

Manage balance sheet: daily/weekly track cash flows [due to tough economic conditions; large pipeline 6-8yrs].

Financing: cash flows are centrally controlled [cheaper and allows flexibility to move funds in-between projects; Project life-cycle management

CFO: Cash flows lie in real time forecasts.

Question 1: *When you hear the words "working capital", what comes to mind?*			
Member 1	Member 2	Member 3	
Tracking cash flows (real time): liquidity drives the business	Driving busines operations	Part of cash and assets to drive business	***Cash drives business***
Deal making (strategy)		WCM has evolved over time	
Part of cash to make business work			
Tell us about the skills that this function requires			
Member 1	Member 2	Member 3	
Diagnostic skills [ability to identify the core issue in a problem]	Creditors management [more practical to keep business going	Communication [linked to survival; one person not speaking up can drive business down	***Effective communication is important in sustaining business***
What did you think about the proposed model?			
Member 1	Member 2	Member 3	
Generally, it fits with our business model	It works! Very accurate in what one must do; but silent when things go wrong.	Model captures the overview of WC [confirms all the things	

		that we battle with]	
It works! Focus on collaborative management to obtain the optimal level of WC	Determinants of WC [70% level of attention] – everything that affects WC is here	Suggestion: order of determinants as these vary with business, to *market-production-credit access*	**CEO differs very strongly**: focus on collaborative management to derive optimal WC management. Market is generally unlimited [units sell fast] and production capacity can be increased through outsourcing, then cash becomes a ***limiting factor***
	Suggestion: weightings/order of the determinants Market-production-credit access		
Think back when you started in this role, tell me about the things you tried to do but discontinued; the changes you tried to make but were not successful.			
Member 1	Member 2	Member 3	
Getting involved in operational detail		Relying on people for information [now consults the source for faster & accurate decision making& current data]	
What role did others have in your success?			
Member 1	Member 2	Member 3	
		Received specific details [live data]	

What helped you continue with the change?			
Member 1	Member 2	Member 3	
Requires effective communication to enable transition from family-owned business to public company.			
What is the one phrase/sentence that best describes your position on this topic			
Member 1	Member 2	Member 3	
Liquidity [no company will go down because of no profitability in the short-term]	Very accurate picture in terms of what we need to do.	Model confirms things that we have been struggling with, determinants of WC.	
	Challenge: model silent on what to do with aspects not under business control, e.g., COJ systemic challenges	Importance of reducing WC to set the appropriate level	
		It links with every facet of our business	
Of all the aspects we discussed, which one is most important to you?			
Member 1	Member 2	Member 3	
Collaboration [will need soft skills]	Interlinkages between determinants of working capital [during problems, operations called to clean up]	Model confirms all the things that we battle with	
Suggestion: Communication [key part] as the		Optimal level of working capital	
organisation is fairly young, and migrating from family-owned to public			

APPENDIX F: DATA SOURCE 2: FOCUS GROUP 2 DISCUSSIONS

FOCUS GROUP 2 DISCUSSIONS [Retail chain store]

Question 1: *When you hear the words "working capital", what comes to mind?*			
Member 1	Member 2	Member 3	Member 4
Tightly controlled equity	Big component	Sell stock before suppliers demand payment	Where do you derive the high ROI? [creditors/customers/stock turnover
Bread & butter	Optimum: depends on strategy	Increase stock turnover	Lifeblood
Level of stock managed rather than supplies	WC to release funds into business operations	Collecting debtors before paying	How do I gear what I spend?
Franchise stock [32 days]; balance with own stores	Dynamic environment	Cash flows	
	Balance		
Tell us about the skills that this function requires			
Member 1	Member 2	Member 3	Member 4
Leadership & expertise	Analytical skills	Operational knowledge [stock items]	Interpersonal skills [to convince & taking people along the journey]
Teamwork to drive the strategic intent	Interpersonal skills [to communicate the impact of transactions]		
Knowledge of franchise debt, stock flow	Financial acumen		
Generate cash [cash is the glue]			
What did you think about the proposed model?			
Member 1	Member 2	Member 3	Member 4
Keep WC management as simply as possible	All encompassing	Good example of high- level view [however,	Simplicity of workflow[workable]

		specifics/detail needed]	
Covers a lot of elements	Covers all influences, key drivers	Sets tone & strategic approach	determines areas that need focus
Can work; focuses attention	Should say "what debt should be"	Has good flow as a model	
Suggestion: use PnP example [generic vs specific]	Simple & workable	Good thinking approach [sets critical areas to focus on]	
All roads lead to Liquidity & Profitability; yet a virtuous circle			
Think back when you started in this role, tell me about the things you tried to do but discontinued; the changes you tried to make but were not successful.			
Member 1	Member 2	Member 4	Member 4
Stopped dictating & directing, to listen more than talk	Wanting to change too many things quickly	Suppliers' offers cheap at face value	Reports that are too voluminous
What you don't know is more important	Stand back and understand business drivers before effecting changes	Stick with what you know as funding is a critical area (cautious in approach).	Too many meetings
	Assist in business success		
What role did others have in your success?			
Member 1	Member 2	Member 3	Member 4
Co-ordinating job that requires the ***support of a wide team.*** Right people in the right place.	Cross-functional imperative	Senior people giving strategic message to guide	Support from CEO/CFO
Right people in the right places	Engage other people	Key elements [insights]	Mandate defined by Group strategy [top-down support]

	Team success		Buy-in from the top for new area
	Underlying information systems [millions of transactions]		
What helped you continue with the change?			
Member 1	Member 2	Member 3	Member 4
Knowing what you want – having a right team to do the "how"	Clear path [understanding strategy] to deliver the mandate	Clear vision	Forging new processes & control with buy-in from the top
Systems & people are key	Ability to adapt to change	Understanding strategy	Breaking down silos
			Create opportunities
What is the one phrase/sentence that best describes your position on this topic			
Member 1	Member 2	Member 3	Member 4
Collaboration, leadership & expertise	Strategy/liquidity – how much can be fed into WC	Manage cash flows [CCC]	WC is dynamic
		Collaboration [both internally & externally]	Payment on time
		Right level of stock [to satisfy customer-needs]	Better terms with suppliers
			ROI and NOT only operation
Of all the aspects we discussed, which one is most important to you?			
Member 1	Member 2	Member 3	Member 4
Strong culture of ***creating liquidity*** and ***delivering value*** to the customers	Strategy and liquidity.	Driving ***cash flows***	ROI
Customer is central to the business	Doing good is good business [PnP slogan]	WCM is key to PnP [bread & wine	Teamwork

APPENDIX G: LANGUAGE EDITING CERTIFICATE

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CERTIFICATE

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TO WHOM IT MAY CONCERN

This is to certify that I have edited this document for English style, language usage, logic and consistency; it is the responsibility of the author to manually accept or reject the suggested changes and interact with the comments to finalise the text. Finalising the references is also the author's responsibility.

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Sincerely

Dr Felicity Horne for Expert English Editors
B. A. (Wits); T.T.H.D (Wits); B.A. Hons (Unisa); M.A. (Unisa); D. Litt. et Phil. (Unisa)

Electronically signed

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