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EVALUATING THE FINANCIAL HEALTH OF THE LISTED FOOD RETAIL COMPANIES IN THE SADC REGION

BY

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DECLARATION 1 - PLAGIARISM

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DECLARATION 2 – PUBLICATIONS

The following publications emanated from this study:

Articles published from this thesis

1. Internal determinants of financial performance among listed food supermarkets in the South African economy. **Investment Management and Financial Innovations [ISSN 1810-4967 (print), 1812-9358 (online)]**

2. Exploring the dynamics of macroeconomic factors on financial stability of listed grocery stores in developing African economies. **2024 IEEE International Conference on Science, Engineering and Business for Driving Sustainable Development Goals (SEB4SDG2024)**

Article submitted for publication

1. Industry-Specific Factors and Retail Stores' Financial Health: Evidence from JSE Listed Retail Stores in SADC (submitted to Cogent Economics and Finance).

DEDICATION

This thesis is dedicated to my Lord and Saviour, Yeshua Hamashiach (Jesus Christ).

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ABSTRACT

This study investigates the financial health of listed food retail companies in the Southern African Development Community (SADC) region, focusing on the impact of macroeconomic, industry-specific, and microeconomic factors. A knowledge gap exists regarding the influence of macroeconomic factors such as gross domestic product, consumer price index, interest rates, and exchange rates; industry-specific factors like firm size, age, competitiveness, human capital, marketing strategy, governance, and social responsibility; and microeconomic aspects like quick ratio, return on assets, current ratio, leverage, total asset turnover ratio, and stock turnover. The study aims to evaluate these factors and propose a conceptual framework for financial health. The data were sourced from the McGregor BFA Library online database. Four holding companies collectively owned 4 590 outlets across the region. However, due to annual reports being conducted at the holding company level, the study obtained 116 observations, representing four firms over a span of 29 years from 1994 to 2022. Statistical methods employed include descriptive analysis and econometric techniques such as Fixed and Random Effects, Panel-Corrected Standard Errors (PCSEs), and Fixed Generalized Least Squares (FGLS). The study's findings, grounded in its hypotheses, indicated that macroeconomic variables, including exchange rates and gross domestic product, are strongly positively correlated with financial health. Among internal factors, quick ratio and return on assets positively influence financial health, whereas leverage and current ratio negatively affect it. For industry-specific factors, company age positively correlates with financial health, while governance shows a negative relationship. The study recommends a new conceptual framework emphasizing the integration of macroeconomic, internal, and industry-specific factors into financial health evaluations. It contributes originality by uniquely addressing financial health determinants in SADC and leveraging advanced econometric techniques to explore these relationships. Furthermore, it establishes that theories such as open systems theory, financial analysis, value-chain theory, and agency theory are instrumental in understanding and improving financial health in the region. This research serves as a strategic tool for retail companies, offering insights for developing financial health policies aligned with regional economic growth objectives and the SADC strategic development plan.

Keywords: Financial health, listed retail companies, JSE, Southern African Development Community

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LIST OF ABBREVIATIONS

SADC	Southern African Development Community
US	United States
UK	United Kingdom
CA	Current asset
CL	Current liability
ROA	Return on asset
ROCE	Return on capital employed
ST	Stock turnover
LEV	Leverage
ATR	Total asset turnover ratio
Size	Firm size
CC	Company competitiveness
HC	Human capital
MS	Marketing strategy
GV	Governance
SR	Social responsibility
CPI	Consumer price index
ER	Exchange rate
IR	Interest rate
GDP	Gross domestic product
FE	Fixed effect
PCSEs	Panel-corrected standard errors
FGLS	Fixed generalized least squares

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 INTRODUCTION

This chapter presents a brief overview of the study, followed by the research problem statement, the study's objectives, research hypotheses, and the significance of the research. Furthermore, it addresses the study's delimitations and limitations and concludes with an outline of the thesis structure.

1.1 BACKGROUND OF THE STUDY

Financial health, as described by Islami et al. (2018), is a lasting research phenomenon that has been expanding for many decades, and it remains a topic of significant interest to the majority of researchers. Mondal et al. (2016) defines financial health as an indication of a company's robust financial viability and its capacity to yield returns on investment. While the current list of food retail companies may reflect recent developments, the concept of food retail exists in diverse forms throughout the SADC region, encompassing countries such as Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic Tanzania, Zambia and Zimbabwe (Strauss et al. (2021), (Ngumo et al., 2020). In the past, traditional and informal markets dominated food retail in the SADC region, such as open-air markets and small neighbourhood shops. These markets provided consumers with fresh produce and basic household goods. In rural areas, informal food retail, such as food stalls and mobile food vendors, provided a vital source of food for communities. Over time, listed food retail has expanded in the region, driven by increasing urbanisation, rising incomes and changing consumer preferences (Adamu and Stanton, 2022). The growth of modern food retail companies in the SADC region has led to the closure of many informal retailers' businesses. This is due to increased competition and a lack of resources, which have been a subject of criticism for modern retailers (African-business, 2023, Veeregowda et al., 2022, Paterson, 2013). Large multinational companies such as Shoprite, Pick n Pay and Woolworths have established a presence in the region, alongside local companies, such as Spar and OK Zimbabwe. Modern food retail companies continue to play an important role in the economic development

and livelihood improvement of the people. They contribute to the creation of employment opportunities, food security, income generation, infrastructure development, market access, technology transfer and tax revenue (Blekking et al., 2022). Regional-strategic-framework (2022) reports that listed food retail companies are fundamental to accomplishing the developmental objectives set out in the SADC regional indicative strategic development plan (RISDP).

Despite the significant economic contributions made by food retail companies in the SADC region over the years, the industry has faced several challenges that may have affected its performance and financial position (Makhitha, 2016). Such challenges include economic instability, which is marked by a high inflation rate, variation in currency values and uneven economic policies, which reduce customer purchasing power and raise operating costs (Mkwizu and Monametsi, 2021). Limited access to financial services and credit makes it difficult particularly for small and medium-sized retail businesses to obtain sufficient capital due to the underdeveloped financial markets in many SADC nations (ECA, 2023). However, the pivotal period of examination for this study is post-1994, a focus chosen due to the political democratisation experienced by influential economies like South Africa. This transformative shift in political landscapes resulted in consequential alterations to socio-economic policies, impacting other SADC member states. During this juncture, retailers grappled with multifaceted challenges, including strategic recalibration necessitated by political instability, diminished employment rates, labour union advocacy on behalf of employees, public health concerns, suboptimal educational attainment levels, prevalent poverty and disparities in gender and developmental aspects (Kalaba et al., 2006). An additional economic constraint documented pertains to the expenses incurred as a consequence of the swift and extensive propagation of the 2008 United States financial crisis, which spread rapidly to SADC countries and beyond, severely impacting global businesses, including food retail companies and threatening to further increase inequality that is still in place to date (ADB, 2023). The crisis led to a decrease in consumer spending, as people from SADC countries became more cautious with their money (Moyo and Markou, 2022). Similarly, the IMF (2009) reported that private consumption growth in SADC countries fell from 6.7% in 2007 to 2.7% in 2008 and then to 1.5% in 2009 (Peter, 2009). The crisis also led to a reduction

in foreign investment in the region, which impacted the growth prospects of the food retail industry. UNCTAD (2009) reports that the foreign direct investment (FDI) inflows to Africa fell by 21% in 2008.

A report by ADB (2023) shows that food retail companies operating in the SADC region have been hit hard by factors such as currency fluctuations, inflation, intense competition and supply chain inefficiencies. The depreciation of local currencies against major global currencies, such as the US dollar, has affected the purchasing power of consumers, which has, in turn, impacted sales and revenue. Inflation raised the cost of goods and services, reducing profitability and making it difficult for companies to maintain affordable prices. IMF (2008) the US 2008 financial crisis made it difficult for SADC food retail companies to compete with international players, which exerted pressure on their prices, margins and market share. Additionally, supply chain challenges, including unreliable transportation systems, inadequate infrastructure and limited access to finance, further compounded the difficulties faced by these companies (Paterson, 2013).

Another serious concern was the spread of the COVID-19 pandemic. Lockdowns, with restrictions on movement and trade, have disrupted the supply chains of food retail companies in SADC, leading to shortages of food products and higher prices for others (IMF, 2022). Equally, the SADC region experienced a reduction in stock demand as many consumers were severely affected by the economic fallout of the pandemic, leading to reduced demand for non-essential items, including food. Significant changes in consumer behaviour and preferences have also occurred, with many people avoiding physical stores and relying on online shopping and delivery services are some of the challenges experienced (van der Berg et al., 2021). However, this shift in consumer behaviour has had a mixed impact on food retail companies, with some seeing an increase in sales due to the surge in demand for online grocery delivery services, while others have experienced a decline in sales as a result of reduced foot traffic in physical stores (Veeregowda et al., 2022). Health and safety measures related to COVID-19, including enhanced cleaning and disinfection procedures and the provision of personal protective equipment (PPE) for employees, have led to higher operating costs for food retail companies in the SADC region (van der Berg et al.,

2021). Additionally, reductions in foot traffic due to lockdowns, curfews and social distancing measures impacted sales for food retail companies in the SADC region (Business-Tech, 2021).

In addition, FAOUN (2020) reports that the SADC region relies heavily on food imports, accounting for approximately 15% of its total imports. This high dependence exposes the region to vulnerabilities stemming from price fluctuations in the global food market. The SADC region also grapples with challenges pertaining to its infrastructure, including insufficient storage facilities and transportation networks. These limitations contribute to issues such as food waste and increased costs within the food supply chain (ADB, 2023). The outbreak of the COVID-19 pandemic exacerbated these challenges. According to the International Food Policy Research Institute (IFPRI), food prices in SADC increased by an average of 10% to 15% in the early months of the pandemic due to supply chain disruptions and panic buying (IFPRI, 2023). The United Nations World Food Programme (WFP) reported that the number of people facing acute food insecurity in SADC rose by 40% in 2020 compared to the previous year. A survey of South African retailers conducted by market research firm Nielsen found that COVID-19-related health and safety measures had increased their operating costs by an average of 10 to 20%. The South African Council of Shopping Centres reported that foot traffic in shopping malls in South Africa fell by 75% during the lockdown in March and April 2020, which impacted sales for food retail companies (ADB, 2023).

When the region was recovering from the impacts of the COVID-19 pandemic, the ongoing conflict between Russia and Ukraine further strained the global economy and affected consumer behaviour in the SADC region. According to Reyhle (2021), one significant way the Russia-Ukraine conflict has impacted food retail companies in the SADC region is through the imposition of tariffs on certain goods. For example, in 2018 the US imposed tariffs on steel and aluminium imports from many countries, including South Africa, a member of the SADC. These tariffs have increased the cost of importing goods into the region, which has had a knock-on effect on food prices and consumer preferences.

According to van der Berg et al. (2021), the local currency has depreciated due to the Russia and Ukraine conflict that began in 2022. As investors have moved their money out of emerging markets in response to the geopolitical instability caused by the crisis, currencies in the SADC region have lost value against the US dollar. This has made it more expensive for food retail companies to import goods, as they need to pay more for the same amount of foreign currency. Ukraine is a major exporter of grain and disruptions to its exports have led to increases in the price of wheat and other grains. Consequently, this has driven up the costs of producing and importing food in the SADC region, further affecting consumer prices (Egbunike and Okerekeoti, 2018a).

In addition to the challenges discussed above, which included the 2008 US financial crisis, the COVID-19 pandemic and conflicts between Russia and Ukraine, studies show that the challenges faced by the food retail industry in the SADC region are beyond those which are famous. (Munemo, 2022, Anyanwu, 2011) indicate that government policies and regulations contribute to the economic downturns of food retail businesses. For instance, in 2020, Zimbabwe, a member of SADC, banned the importation of certain food products, including vegetables, fruits and bottled water, to protect local producers and reduce imports. This confirms the political instability in some countries in the region, which affects food retail companies. According to Pasara and Diko (2020), the internal trade within the SADC region has historically been lower compared to trade with other African countries and one of the main reasons for this is the trade barriers imposed by SADC member governments. These barriers include tariffs, non-tariff barriers and complex customs procedures, which create challenges and increase the costs associated with cross-border trade for food retail companies. Likewise, Geda and Yimer (2023) mention that poor infrastructure in some SADC countries, including inadequate transportation and underdeveloped communication networks, makes it difficult for food retail companies to transport and distribute goods within the region. Regulations related to food safety and standards vary between SADC countries, making it challenging for food retail companies to navigate and comply with varying regulations, which can delay operations and increase costs.

Food retail companies in the SADC region face intense competition from both local and international corporations, each vying for market share (Krueger, 2022). Climate

change is another challenge faced by food retail companies in SADC. Climate change exacerbates the frequency of droughts and floods, severely disrupting food production and transporting, leading to shortages and increased prices. Climate change makes it difficult for food retail companies to maintain adequate stock levels and supply their customers with the products they need (WPF, 2021). According to Ndebele (2022), more than a quarter of the natural disasters that took place in Africa 40 years ago carried an estimated economic loss of $40 billion. IT-News-Africa (2023) reports that while Fourth Industrial Revolution (4IR) technologies offer some benefits, their implementation is challenging for food retailers in the SADC region due to factors such as infrastructure limitations, lack of skilled labour and cost. According to Paterson (2013), another challenge is the failure of modern food retail companies to fulfil their social responsibility by mentoring small retail businesses in the communities they service, which could foster local economic growth.

Appointing the right leadership is crucial, though this seems to be a challenge in the retail industry in SADC, especially in light of the recent defrauding of the Black Economic Empowerment (BEE) funding by one of the leading food retailers in the SADC region. An executive member stands accused of manipulating valuations and financial documents to inflate the balance sheet and profits through the BEE funds. Allegations suggest that this was a strategy to conceal losses and boost bonuses for executives. It is further claimed that the company executive member was rewarded a share incentive as a result of this manipulation (Manyane, 2022). This suggests that the listed food retail companies in the SADC region may struggle with maintaining effective corporate governance.

Despite assertions about the impact of various factors on the retail sector, particularly in food retail, there is inadequate scientific evidence regarding the factors influencing the financial health of listed food retail companies in the SADC region (Munemo, 2022). Local studies have mainly examined the factors influencing the value chain and impact of supermarkets on agricultural and industrial development. These studies have primarily used data from a limited number of Southern African countries, specificallySouth Africa, Zambia, Namibia and Botswana (Emongor and Kirsten, 2009, Emongor, 2009, Morris et al., 2021). Gereffi et al. (2005) and Humphrey and Schmitz* (2001) examined the governance structures and power relations within global value

chains, presenting insights into the administration of these chains. Ketchen Jr et al. (1993) stressed the significance of aligning activities within the value chain to achieve better performance, while Lorenzoni and Baden-Fuller (1995) underline the role of collaboration in gaining a competitive advantage and improving financial health in managing value chain relations.

Nevertheless, international research on food retail companies mainly focuses on regions such as East Asia, Europe, and North America, with relatively little involvement from Africa, and often uses varying methodologies (Baldwin, 2012, Geneva, 2013, Outlook, 2014, Foster-McGregor et al., 2015, Nzuza et al., 2024b, Nzuza et al., 2024a). Other research studies by (Das Nair, 2018, Das Nair and Dube, 2016) are focused solely on supermarkets and not specifically on food retail companies. This presents a gap in knowledge that needs to be addressed in order to inform policy decisions, support business growth and enhance the economic development of food retail companies operating in the SADC region.

Middle-class population in SADC

Food retail stores are an important leverage point for changing the communities, especially those in developing countries like SADC. However, many of the households in SADC countries are reportedly engulfed in poverty (Habson, 2020). SADC (2023b) reports the problems of poverty to have not been adequately aligned with the economic growth in SADC with a high unemployment rate varying between 10.2% and 11.3% between 2009 and 2020, with most of them being youth. In a survey conducted by KPMG (2013), demographic factors like the size of the population, household income levels and urbanisation of regions were found to be influencing economic growth in the SADC countries. Habson (2020) shows that the SADC communities are particularly vulnerable and frequently excluded from development opportunities. Many unskilled people live with terminal diseases, are immigrants and have physical disabilities. They have limited access to opportunities, including those provided by their governments and global community. Bhorat et al. (2023) state that according to the AfDB, nearly 33% of the people in SADC are middle-class, surviving on $2 to $20 a day, approximately 63% belong to the fluctuating group, with eating spending amid $2 and $4 daily. On the other hand, the World Bank uses the US$2/day standard as a poverty line. The AfDB admits as much, denoting the group whose expenditure is between $2

to $4 per day as the fluctuating group (African-development-bank-group, 2015). Kharas (2017) implies that lawmakers should give greater attention to the growing middle-class, particularly to those who are at risk of slipping back into poverty due to economic fluctuations. Even though Africa's population is increasing, with predictions signifying that by 2027 the sum of people living in the SADC region will surpass 400 million, the middle-class is the hope for the retailing industry in SADC. The yearly peoples establishment report of the United Nations put the middle-class in the universal centre stage for development (African-development-bank-group, 2023). Even though SADC formal retailers are reportedly remaining industrialised, with most retailing being done by the informal stores (Lentz, 2020), much has been stated about the prospect for consumer expenditure in Africa, driven by demographics and speedy economic development. This has fuelled significant attention from international retailers to establish a presence on the continent. Given that middle-class consumers in SADC countries are brand-loyal, entering the market early offers the advantage of establishing brand loyalty and securing a first-move advantage. According to Jumare et al. (2023), even though modern food retailers are projected to penetrate Africa by the end of 2030, SADC countries are reported to remain in poverty and with the demographic and infrastructural problems, foreign investors are likely to remain hesitant about entering SADC market. Studies by Nielsen and Jenkins (2021) show that formal food retailing is struggling to control the market in SADC, while informal food retailers resist change by offering convenient products closer to the community, unlike formal retailers who operate at a distance.

The majority of SADC member states have a debt ratio to GDP that is above 50%. It is reported that due to the COVID-19 pandemic, countries had to borrow to fund socioeconomic activities as their GDP and budget revenues collapsed. The lowest debt ratio to GDP is for the DRC, Botswana and Tanzania all of which are paying less than 40% of their tax revenues on debt. Even though South Africa has the strongest economy in the region, it is estimated that by 2027, its debt- to-GDP ratio will hit 83.8% (O'Neill, 2024). These statistics show that SADC is an unequal region with diverse economic dynamics, which impacts the survival of the listed food retail companies operating there.

SADC population and age (1995-2050)

Worldometer (2023) indicates that before the COVID-19 pandemic, the SADC population growth rate averaged 1.53% from 1995 to 2019. When COVID-19 claimed many lives, the SADC population growth rate dropped from an average of 1.35% in 2019 to 1.31% in 2020 of which 64.7% in 2019 lived in urban areas. The population growth rate predictions indicate an unsteady increase of around 0.86% from 2020 to 2050, lower than the 1.35% reported in 2019. Due to Africa's demographic momentum, the continent's growth rate remained at 2.6% per annum until 2015 and is expected to slowly decline to 2.4% by 2025 as fertility falls (Goldstone, 2019). However, there is no strong hypothesis that can be generalised as the variation in the continent of Africa is too large. For example, the socioeconomic policies that governments adopt to improve citizens' livelihood vary depending on the country's financial capacity (Ambel et al., 2015).

Population age in SADC

According to the World Bank, the average age of Africa's population was 19.7 years in 2012 and is projected to reach around 25 years by 2050, making it the continent with the youngest demographic. Additionally, estimates indicate that in 2015, Africa had approximately 226 million people aged 15 to 24, with this number expected to double by 2045. In 2021, Africa was still reported as the continent with the youngest population worldwide with around 40% of the population aged 15 years and younger, compared to a global average of 26% (He, 2022). Intelligence (2016) reports that when the population grows, the labour force grows more rapidly and resources become available for economic growth with consumer consumption pressuring supply chains and affecting the retail and consumer sector fundamentally. Likewise, African-development-bank-group (2023) reports that the retail industry in Africa is facing both economic and social challenges which have been crystallised by the amount of local and global changes including the COVID-19 pandemic, the Russia-Ukraine war, political and social instability, structural constraints, climate change and currency devaluation.

Consumer spending behaviour in SADC

The spending behaviour of SADC consumers is determined by disposable income per capita, which is measured by the average income earned per person in a given period

(Nielsen and Jenkins, 2021). There is a significant and positive link between an individual's income and consumption per capita for several goods (Lappeman et al., 2021). At the lowest income bracket, there is very limited cash (if anything) left to use after basic needs have been met. Dodd (2021) studied the theoretical relevance of Maslow's Hierarchy of Needs in the 21st century and at the lowest income bracket, consumer spending is primarily on food (Nielsen and Jenkins, 2021); some households obtain food from their small plot of land rather than buying from shops. Any extra production is then traded to pay for other necessities including shelter and clothing. As soon as people start earning more than what they need, cash becomes available to use for more than just their basic needs. This trend reflects an increase in the income earned by households, allowing for improved day-to-day consumption to healthier levels. Following this, an added increase in income will permit a switch to an improved lifestyle and quality of food consumed. Dodd (2021) agrees that when income increases, consumers will start shifting from lower quality products – first to economy brands and later on, to top brands. For example, consumers will move away from buying beer towards products that are seen to be classier, such as wine, whisky and brandy. Cui et al. (2021) state that even in the higher-income consumer bracket, further variation is possible, i.e. from ordinary to premium products. African-development-bank-group (2023) states that as nations implement strategies to harness Africa's manufacturing capabilities and position the continent as a global food supplier, the food retail sector must play a central role. This sector is crucial in bridging the gap between farmers and consumers, generating more sustainable employment opportunities, and boosting government tax revenues. To support this effort, the African Development Bank Group has endorsed eliminating obstacles to agricultural growth to attract new investments. The goal is to elevate Africa's agricultural production from $280 billion annually to $1 trillion by 2030.

SADC countries

SADC was initially established in 1980 as the Southern African Development Coordination Conference (SADCC). Over time, SADC has expanded its membership from 11 to 16 countries including Zimbabwe, Mauritius, Lesotho, Seychelles, Namibia, Zambia, Botswana, Angola, United Republic Tanzania, South Africa, Democratic Republic of Congo, Comoros, Mozambique, Malawi, Madagascar, and Eswatini. As part of SADC efforts to foster socio-economic growth across the continent, SADC has

adopted the regional indicative strategic development plan (RISDP) 2020-2030 followed by the industrialisation strategy and roadmap 2015-2063 as key strategies and vision for achieving provincial incorporation and sustainable growth. Notably, the advancement of this strategy is also informed by the African Union program 2063: The Africa We Want. Nevertheless, there are several challenges that SADC is facing (ESD-regional-strategic-framework, 2022, Union, 2020).

Angola

In 2022, Angola's real GDP growth rose to 3%, compared to 1.1% in 2021. Despite this increase, income per capita continued to decline by -0.2% due to a high population growth rate of 3%. The boost in GDP was largely fuelled by elevated oil prices, which averaged $100.65 per barrel, driven by the geopolitical influence of Russia's invasion of Ukraine. This was significantly more than $59.00 per drum projected in the 2022 nationwide budget, resulting in an additional $17.18 billion in revenue. Consequently, the economic surplus grew to 3.0% of GDP in 2022, up from 1.9% in 2021. However, the decrease in oil exports led to a reduction in the savings account, which fell to 8.9% of GDP in 2022 from 11.2% in 2021. Meanwhile, the debt to GDP ratio continued to fall, reaching 56.1% in 2022, down from 82.9% the previous year. These economic developments could significantly impact consumer behaviour in Angola, particularly for retail companies (Lazanyuk and Mambu Diu, 2022).

Botswana

Botswana's economy is vulnerable to external shocks due to its reliance on diamonds and a state economic model. Diamonds account for almost 90% of the country's total exports and serve as the main source of fiscal revenue. Additionally, the increasing frequency and severity of climate change, including rising heat levels and variations in rainfall patterns, have disturbed agricultural harvest and endangered livelihoods in the economy of Botswana. Notwithstanding Botswana's moderately high salary levels, poverty remains pervasive. Employment has lagged, with joblessness persistently above 25% as of 2023 third quarter and the level of inequality, as measured by a Gini index of 53.3, ranks among the highest globally. Botswana's economic expansion is expected to decelerate to 3.3% in 2023, a decrease from 5.8% in 2022. This slowdown is largely attributed to a drop-in diamond production and prices, driven by reduced

global demand. However, growth is expected to pick up slightly over the medium term, driven by increased global demand for diamonds and ongoing efforts to diversify the economy (SADC, 2020).

Comoros

Despite the increase in global prices following the conflict between Ukraine and Russia, the GDP of Comoros grew to nearly 3% in 2022, up from 2.2% in 2021. One factor contributing to this growth is the strong performance of agriculture, which benefited from high prices for key export commodities. Household final consumption spending also rose, supported by fund transfers from abroad. However, inflation surged by 12.3% in 2022 compared to 2021, driven by sharp increases in energy and food prices. In response, the central bank adopted a restrictive monetary policy in 2022, raising the minimum reserve requirement by 5% and conducting multiple liquidity operations. Additionally, increased public spending, spurred by higher prices and government subsidies on imported food products like rice and flour, expanded the country's budget deficit to 3% of GDP. The debt to GDP ratio was 32.7%, and the risk of over-indebtedness remains elevated due to the limited capacity to repay non-concessional loans. Additionally, the current account balance moved to an estimated deficit of 3.2% of GDP, down from a 0.4% surplus the previous year, primarily due to a persistently high trade deficit and decreased foreign aid. The poverty rate in the country increased by 0.1% from 2021 to 2022 (SADC, 2020).

Democratic Republic of Congo (DRC)

In sub-Saharan Africa, DRC is the largest country by land area and ranks the 11th largest in the world. In 2022, the DRC had the third-fastest growing population in Africa and the sixth-fastest internationally, with an annual population increase of more than 3%. It is the fourth most populous country in Africa, following Nigeria, Ethiopia and Egypt and the fifteenth most populated in the world. The country's mining production and high global commodity prices boosted its economy by 8.9% in 2022. The DRC is heavily dependent on commodity trade, particularly tungsten, tantalum, cobalt, tin, copper and oil. Other sectors, including food retailing, contribute less to the country's GDP compared to mining. The DRCs GDP per capita is projected to reach US$2,605 by 2043, comparable to 84.2% of the projected average for low-income African

countries in the same year. However, in 2022, about 72.3% of the DRCs population lived in extreme poverty, surviving on less than US$2.15 a day. Consequently, nearly one-quarter of people living in extreme poverty in low-income African countries in 2022 were in the DRC (SADC, 2020). When the majority of the population lives in poverty, purchasing food items from listed retail companies becomes a privilege for the wealthy.

Eswatini

A decline in GDP of 4.3% from 2021 to 2022 was reported in Eswatini. This decline reflects the spillover effects of South Africa's weak economic performance due to the disruptive impact of the Russia-Ukraine conflict. The economic downturn resulted in a significant drop in consumer spending, influenced by higher credit costs and fiscal constraints due to elevated inflation. Inflation surged to 4.8% in 2022, up from 3.7% in 2021, largely due to increased prices for food and transportation. In response, monetary policy was tightened, with plans to raise interest rates gradually in the coming year. Additionally, the Lilangeni and Rand experienced a 9.5% depreciation against the US dollar in 2022, primarily because of diminished investor confidence in South Africa amidst its ongoing energy crisis (SADC, 2020).

Lesotho

Lesotho, a small, mountainous nation entirely encircled by South Africa, has a population of around two million and a per capita GDP of $999.7 as of 2022. Classified as a lower middle-income country, Lesotho experienced a 1.5% increase in real GDP per capita in 2022, up from 0.3% in 2021. Growth is projected to be 1.0% in 2023 and 1.5% in 2024. Financial indicators showed positive developments, with a 0.4% rise in ROA from 2021 to 2022 and a 3.4% increase in ROE over the same period. Despite these improvements, poverty remains a major issue, with half of the population living below the national poverty line since 2017. Youth unemployment stands at a high 33.2%, significantly higher than the overall unemployment rate of 24%. Additionally, around 500 000 individuals in Lesotho face food insecurity, creating significant obstacles for the survival of the food retail companies under analysis (SADC, 2020).

Madagascar

Madagascar's socio-economic development continues to be hampered by limited growth potential and vulnerability to frequent and severe external and internal crises. Even before the COVID-19 pandemic, the country's economic growth was insufficient to significantly improve living standards and reduce poverty. Political stability from 2013 to 2019 allowed key export markets and external financing to support modest economic revival, with growth averaging only 3.5% during this period. However, this rate barely exceeded population growth and was much weaker than the investment-led growth seen in 2005. Moreover, despite an approximate 0.7% annual increase in overall GDP per capita from 2013 to 2019, this was not enough to lift a significant portion of the population out of poverty. To effectively reduce poverty in the coming years, Madagascar will need to achieve much higher and more inclusive growth. This would require the government to implement comprehensive reforms that attract new investments. Critical policy priorities for Madagascar include taking decisive actions to address food insecurity, boosting domestic food production and reforming fuel and electricity prices in ways that protect the poor (SADC, 2020, Cooke et al., 2022).

Malawi

The Malawian economy fully recovered within two years after COVID-19. However, GDP declined by 1.4% from 2021 to 2022. Factors contributing to this slower growth included the Russia-Ukraine conflict, climate changes and disruptions in global logistics. Amid these challenges, agriculture emerged as the leading contributor to GDP growth in 2022, accounting for 22.1%, with wholesale and retail trade contributing 12.6%, and real estate and construction adding 6.5%. Inflation jumped by 11.7% between 2021 and 2022, driven by increases in both food and non-food prices. Furthermore, the Malawian currency depreciated in May 2022, weakening from 824.8 Malawi kwacha per US dollar to 1,036.2. Throughout 2022, banking sector liquidity became more constrained, and the proportion of nonperforming loans rose from 4.5% at the end of 2021 to 6.1% (SADC, 2020).

Mauritius

Post-COVID-19, the Mauritian economy continues to face uncertainties associated with economic disruptions. The International Monetary Fund (IMF) has cautioned about

the potential for a global recession in 2023, driven by ongoing inflation, climate change, and crises related to energy and food and conflicts, as well as rising interest rates. Mauritius, heavily reliant on energy and food imports, is particularly susceptible to global price increases in these areas. Consequently, while economic recovery from the pandemic is expected to continue in the future, it is anticipated to proceed at a slower pace due to the unfavourable external economic conditions (SADC, 2020). The revival of the tourism sector contributed to a 5.3% increase in real GDP from 2021 to 2022. Although the country benefited from a supportive monetary policy in 2021, which capitalised on low inflation, the situation changed dramatically in 2022. Inflation surged to 10.8%, up from 4.0% the previous year, driven by rising import costs for food and energy resulting from the conflict between Russia and Ukraine (SADC, 2020, Doorga, 2022).

Mozambique

Although Mozambique is one of the lowest greenhouse gas emitters globally, it ranks among the top 10 countries most affected by climate change. At the 2021 United Nations Climate Change Conference, Mozambique committed to reducing its Nationally Determined Contribution emissions from 76 to 99 metric tons of carbon dioxide equivalent, with a strong emphasis on adaptation measures to promote sustainable green growth. The COVID-19 pandemic severely impacted the country's economy, causing the current account deficit to widen considerably, increasing from 23.6% of GDP in 2021 to 39.1% in 2022. Real GDP growth increased by 1.5% in 2022 compared to 2021, marking a recovery from global shocks such as the COVID-19 pandemic, conflicts and geopolitical pressures. However, this growth was accompanied by a steep rise in inflation, which surged to 4.6% in 2022, primarily due to higher fuel and food prices (SADC, 2020).

Namibia

Namibia's low-lying and southern and desert areas frequently suffer from inconsistent rainfall and are vulnerable to flooding. To address these challenges, significant resources are needed; however, private climate finance remains minimal compared to public funding. During 2019/20, Namibia's climate finance totaled an average of $202.3 million, with $32 million (16%) provided by the private sector and $170 million (84%)

sourced from government funding. Furthermore, by 2022, the public sector wage bill in Namibia, which has been a longstanding financial strain, remained high, pushing public debt to 67% of GDP. Inflation increased by 2.5% from 2021 to 2022, primarily due to rising global commodity prices driven by various economic shocks, including the COVID-19 pandemic and Russia's invasion of Ukraine. Despite Namibia's success in diversifying its GDP beyond the mining sector and investing in oil exploration, key industries like construction and financial services, which are vital for job creation, continue to lag behind (SADC, 2020).

Seychelles

Tourism and fisheries continue to be significant growth drivers for Seychelles, while potential opportunities in knowledge-intensive services such as financial technology remain largely unexplored. The country's GDP growth increased by 1.6% from 2021 to 2022, though this was below the East Africa average of 4.55%. The economic growth was driven by tourism, fisheries, and household spending. However, the economy's heavy dependence on imports made it vulnerable to external shocks. Despite these issues, monetary policy remained accommodative, and inflation fell by 7% from 2021 to 2022 as supply chain disruptions eased, though it still exceeded pre-pandemic levels. The Seychellois rupee strengthened by 33% in 2022, reaching 14.4 rupees per US dollar, due to a boost in tourism. Enhanced revenue collection helped reduce the fiscal deficit by 3.2% of GDP from 2021 to 2022. Moreover, the current account deficit narrowed to 7.0% of GDP in 2022, compared to 10.8% in 2021 (SADC, 2020, Benzaken et al., 2022).

South Africa

In 1996, the South African government introduced the GEAR strategy as a replacement for the RDP policy (Kofi Ocran, 2011). The primary objective of GEAR was to boost economic growth and redistribute income within the economy by setting ambitious growth targets (Oosthuizen and Bhorat, 2005). Subsequently, the government launched various policies to tackle issues related to skills and poverty, including Skills Development programmes, the Black Economic Empowerment Act and social grants, aiming to create employment, reallocate resources and achieve robust economic growth. However, without improving government revenue strategies beyond

raising tax rates, which burdened a limited number of working individuals, initiatives like grants proved ineffective. Consequently, government expenditure as a percentage of GDP rose from 20% in 2006 to 29.91% in 2016 and further to 35.98% in 2020. Although the COVID-19 pandemic contributed to the increase in 2020, expenditure had already exceeded 30% in the years leading up to 2020 due to poor financial governance and inadequate handling of economic issues. This is evidenced by persistently low economic growth that continues to challenge South Africa's economy (SADC, 2020). From 1994 to 2016, South Africa's GDP growth averaged less than 3.1%. Notably, the country experienced a period of high growth between 2004 and 2008, averaging 4.9% during these years, with peaks of 5.6% in 2006 and 2007. However, the global financial crisis of 2008 precipitated a domestic recession in 2009, resulting in a GDP contraction of 1.5%. This recession effectively erased the economic gains of the preceding years. Consequently, between 2010 and 2016, GDP growth in South Africa slowed significantly, averaging only 2.8% (Parkin, 2013).

United Republic Tanzania

In July 2020, Tanzania achieved the status of a lower-middle-income country as recognised by the World Bank, moving up from the lower-income category. This followed Tanzania's gross national income per capita reaching $1,080, surpassing the lower-middle-income threshold of $1,036 set in 2020. This milestone is significant for Tanzania and its citizens, who have reason to celebrate, especially considering that it often takes countries many years to advance from one income category to another. Achieving this status ahead of the 2025 target set by Tanzania’s Development Vision 2025 is particularly noteworthy. Likewise, fiscal performance data indicate a consistent increase in domestic revenue collection, though it remains below the set annual targets. Domestic revenue as a percentage of GDP grew by 1.3% from 2016/17 to 2019/20. Similarly, development expenditure as a percentage of GDP rose by 8.9% from 2015/16 to 2019/20. However, the fiscal deficit as a share of GDP decreased by 2% from 2015/16 to 2019/20, which is well below the East African Community (EAC) and SADC convergence target of 3%. This deficit reduction was largely financed through borrowing from both domestic and foreign sources (Turuka, 2022).

Zambia

Zambia is undergoing a significant demographic transition, emerging as one of the world's youngest nations in terms of median age. With a growing youth population entering reproductive age, the country is expected to double its population over the next 25 years, placing additional strain on job creation, food security, healthcare and other essential services. Rich in metals, gemstones, industrial minerals and potential energy sources like coal, hydrocarbons and uranium are the main commodities of Zambia and it remains globally competitive in copper and cobalt production. Reliance on copper mining has led Zambia to recognise the risks associated with such dependence and it is actively diversifying its economy to reduce reliance on the copper industry. This diversification strategy encompasses sectors such as agriculture, tourism, gemstone mining and hydroelectric power generation. Zambia is also a member of the Free Trade Agreement involving the 15 SADC countries. The SADC Free Trade Area, established in August 2008, resulted from a phased tariff reduction programme that began in 2001, achieving zero duty on 85% of intra-regional trade among member states. In terms of capital expenditure (capex), Zambia's key sectors include food and beverages, business services and software and information technology services, highlighting the strategic importance of listed food retail companies in the country's economic development (SADC, 2020).

Zimbabwe

The previous currency (ZWL) in Zimbabwe experienced significant depreciation against the USD, as evidenced by the auction exchange rate. This depreciation created difficulties for low-income households, which primarily received their earnings in ZWL and had limited access to USD. With prices set solely in USD and significant fluctuations in ZWL prices, their purchasing power and ability to access food decreased. In response to liquidity challenges, rural households began to revert to bartering using livestock and grains to obtain essential goods and services. These households have intensified existing livelihood strategies, such as engaging in petty trade by selling repackaged food and household items, increasing vegetable production where water is available and participating in artisanal mining activities. However, these arrangements do not suit listed food retail companies because transactions must be conducted in cash rather than through the exchange of goods,

which is an outdated barter system. Real GDP in Zimbabwe fell by 5.5% from 2021 to 2022 due to a combination of significant external and internal shocks. Adverse weather conditions, including floods and droughts, severely impacted agricultural output, which contracted by 14% in 2022. Additionally, macroeconomic instability, driven by exchange rate depreciation and hyperinflation, has impeded overall production. The Zimbabwean dollar (ZWL) fell by 521% against the US dollar, dropping from 108 ZWL per USD in January 2022 to 671 ZWL per USD by December 2022. This dramatic decline contributed to a sharp inflation increase of 224.4% between January and June 2022. These economic pressures are further exacerbated by the global impact of the Russia-Ukraine conflict, which drives up fuel and food prices. In an attempt to combat hyperinflation post-COVID-19, Zimbabwe introduced a new currency called ZiG (short for Zimbabwe Gold), backed by the nation's gold reserves. However, this new currency is already facing challenges, with some government departments refusing to accept it, indicating potential lack of trust and acceptance (SADC, 2020).

In summary, the extant literature reviewed thus far for all the SADC countries under investigation demonstrates that countries have different strengths and weaknesses. For example, Zimbabwe's economy is facing severe challenges, with a sharp decline in GDP growth and significant inflation driven by currency depreciation. Zambia is undergoing a major demographic shift and is working towards diversifying its economy beyond its heavy reliance on copper mining. Tanzania achieved lower-middle-income status in 2020, reflecting fiscal improvements despite ongoing economic challenges. South Africa has struggled with modest economic growth and high government expenditure, exacerbated by the COVID-19 pandemic. Seychelles' economy recovered modestly in 2022, driven by tourism and fisheries but remains vulnerable to import reliance. Namibia deals with climate variability and a high public sector wage bill, impacting its economic stability. Mozambique, heavily affected by climate change, experienced GDP growth in 2022 but also significant inflation. Mauritius continues to face uncertainties due to global economic shocks, impacting its recovery from the pandemic. Malawi experienced economic recovery post-COVID-19, but faced GDP decline and inflation due to external conflicts and climate shocks. These experiences directly impact the operations of listed food retail companies, particularly when income

distribution is compromised and economic shocks affect inflation, thereby influencing food prices and consumer spending patterns.

1.2 STATEMENT OF THE PROBLEM

Food retail companies are fundamental to achieving the developmental objectives set out in the SADC RISDP, which includes advancing sustainable economic development, boosting regional integration and infrastructure, improving human and social progress, reinforcing governance and security, and promoting environmental sustainability within the region (Regional-strategic-framework, 2022). This requires the SADC region to be served by a set of financially sound food retail companies. However, the financial health of retail stores in the SADC is adversely affected by several difficulties. The retail industry in the area has potential for growth, but there are a number of obstacles to its viability and profitability. Such challenges include economic instability, which is marked by a high inflation rate, variation in currency values and uneven economic policies, which reduce customer purchasing power and raise operating costs (Mkwizu and Monametsi, 2021). Limited access to financial services and credit make it difficult, particularly for small and medium-sized retail businesses, to obtain sufficient capital due to the underdeveloped financial markets in many SADC countries (ECA, 2023). Moreover, the retail stores in the SADC region are struggling with the market and consumer dynamics caused by the COVID-19 epidemic, which makes integrating these changes into business models and investing in technology required for e-commerce and digital payment systems challenging (EFSA, 2023, SARDC, 2023).

Retailers in the region often have high debt levels, with some companies reporting debt-to-equity ratios exceeding 100%. This can strain cash flow and increase financial risk. The World Bank has reported that logistical costs in SADC countries can be as high as 20% of total costs, compared to around 8% in more developed regions, impacting profitability. The average GDP growth rate in many SADC countries has been inconsistent. For instance, according to the African Development Bank, several countries experienced GDP growth rates below 3% in recent years, limiting consumer spending. High inflation rates (e.g., over 10% in countries like Zimbabwe) erode purchasing power, affecting sales and profit margins. Therefore, this study aims to

investigate the financial stability of retail outlets in the SADC area, focusing on identifying the effects of microeconomic factors, industry-specific factors and macroeconomic factors on their financial health.

This study will specifically fill the following research gaps. There is a lack of comprehensive research on the effects of microeconomic factors QR, ROA, CR, LEV, ATR, ST, industry-specific factors (Firm size (Size), Firm age (Age), Company competitiveness (CC), Human capital (HC), Marketing strategy (MS), Governance (G) and Social responsibility (SR)) and macroeconomic factors (Consumer price index (CPI), Interest rate (IR), Exchange rate (ER), Gross domestic product (GDP)) on the financial health of these companies. The absence of well-established frameworks for evaluating financial health adds to the complexity of this issue. Furthermore, existing studies on financial health in developing economies have largely focused on a limited number of Southern African countries and have not adequately examined the financial health of listed food retailing companies in the SADC region (Munemo, 2022). Decomposing financial health into internal, macro, and industry-specific dimensions enables a nuanced assessment of the financial and business risks these companies face.

1.3 AIM

This study seeks to evaluate the financial health of listed food retail companies in the SADC region and propose a conceptual framework for the factors influencing their financial health.

1.4 OBJECTIVES

- Investigate the effect of the macroeconomic factors on the financial health of the listed food retail companies in the SADC region;
- Analyse the effect of the internal factors on the financial health of the listed food retail companies in the SADC region;
- Investigate the effect of the industry-specific factors on the financial health of the listed food retail companies in the SADC region; and
- Propose a conceptual framework on the factors influencing the financial health of the listed food retail companies in the SADC region.

1.5 HYPOTHESES OF THE STUDY

H1: There exist a positive association between macroeconomic factors and financial health

H2: There exist a positive association between internal factors and financial health

H3: There exist a positive relationship between industry-specific factors and financial health

1.6 JUSTIFICATION OF THE STUDY

The SADC region is one of the most economically important regions in Africa, with a combined GDP of over US$700 billion. It is home to several resource-rich countries, such as South Africa, Zambia and Angola, which make it an attractive region for investment and trade. Compared to other regions in Africa, the SADC region has a relatively stable political environment. Most countries in the region have experienced peaceful transitions of power and the SADC has played a significant role in mediating conflicts in the region (Munemo, 2022). Therefore, targeting the SADC region to conduct the proposed study can provide sound research results that can be used to inform policy development in the African continent. Even though most research on financial health has focused on the private sector in developed countries, there is limited research on listed food retail companies in developing countries. This study will contribute to the scholarly work by using data from listed food retail companies in the SADC region, an area where few, if any, studies have been conducted.

Gereffi et al. (2001) advocate for research to assess the importance of the value chain perspective among researchers and policymakers. This study will propose a conceptual framework for policy interventions to revaluate the suitability of theories used in assessing financial health, with listed food retail companies in the SADC region as a reference point. This study will offer an original outlook given a range of variables in the context of determinants of financial health theoretical predictions and their interplay in influencing the financial health of the listed food retail companies in SADC. The combination of determinants that affect the listed food retail companies may be unique from other industries as food retail industries are exposed to internal, industry-specific and macroeconomic factors. This gap in the literature compounds the policy

problem insofar as improving the listed food retail companies' financial health is concerned.

Overall, this study will contribute originality to the existing body of knowledge by examining financial health through the analysis of the relationships between financial health and macroeconomic, internal, and industry-specific factors, with a regional focus on SADC countries. It seeks to develop a conceptual framework that emphasizes the comprehensive integration of these factors as key determinants of financial health for listed retail companies in the region. Moreover, this research will be the first to establish if whether the open systems theory, financial analysis theories, value-chain theory, and agency theory are capable of driving the financial health of listed retail companies within the SADC region. Decomposing financial health into internal, macro, and industry-specific dimensions enables a nuanced assessment of the financial and business risks these companies face. The study will be the first to utilize data from MacGregor financial statements, the IMF, and internet sources covering the period from 1994 to 2022. Moreover, it will explore the relationship between macroeconomic, internal, and industry-specific factors and the financial health of listed retail companies in the SADC region using advanced econometric techniques such as Fixed and Random Effects models, PCSEs, and FGLS, along with diagnostic tests like cross-section independence, the Kao test, unit-root tests, and Breusch–Pagan tests. This approach has not been applied in previous research, further contributing to the study's originality.

1.7 DELIMITATIONS

The research centred on food retail corporations within the SADC. The study comprised a sample size of 4 590 retail outlets in the SADC region. Among these, 2 787 belonged to Shoprite Holdings Ltd, 1 020 to SPAR Group Ltd, 2 080 to Pick n Pay and 783 to Woolworths Holding Ltd. The study excluded unlisted food retail stores in the SADC region due to the unavailability of easily accessible financial statements for these entities. The 4 590 sampled retail companies do not individually publish their financial reports per country. Instead, they consolidate their financial reports, which are then published at a group level on the South African Johannesburg Stock Exchange (JSE). The dataset was accessible from the McGregor BFA Library and Bloomberg

online database. Economic indicators were sourced from the IMF via the internet. The data were from the period 1994 to 2022.

1.8 LIMITATIONS

The study employed a single measuring instrument to ensure the validity and reliability of the results in line with the research objectives. The financial statements served as the basis for measuring the variables across the companies. Ratio analysis was specifically utilised to gauge the variables derived from the financial statements over the 29-year period (1994 to 2022). Since the listed food retail companies report their financial statements to the JSE, the researcher extracted data from the McGregor BFA Library online database. The financial statements underwent an audit process before their publication, establishing them as reliable sources of information for this study. Despite there being 4 590 outlets in the SADC during the study period, the financial statements were not disclosed per country but at the holding company level. This resulted in a total of four listed food retail companies under investigation, with 116 observations (4 companies x 29 years (from 1994 to 2022)). According to Delice (2010) a sample size exceeding 30 is deemed acceptable for quantitative studies. Nyamita (2014) further contends that researchers typically consider a response rate of 15% to 20% as acceptable, with 10% being the minimum threshold. However, in this study, data was obtained for the entire sample size across the four companies, achieving a complete 100% match.

1.9 STRUCTURE OF THE STUDY

Chapter One outlines the study, including the background, problem statement, research objectives, hypotheses, and the study's significance, along with its limitations and scope.

In Chapter Two, a comprehensive review of the literature pertaining to listed food retail companies is presented. This includes an exploration of SADC patterns of supermarketisation, an assessment of the potential of listed food retail companies to drive development in the SADC region and an examination of the SADC region's participation in both global value chains (GVC) and regional value chains (RVC).

Chapter Three presents a literature review on the financial health and explains different financial ratios.

Chapter Four discusses different theories within the field of financial management and presents the conceptual framework of the study.

Chapter Five offers a review of empirical studies on the factors influencing financial health. It encompasses an analysis of internal, macroeconomic and industry-specific factors and providing the hypotheses to be tested in the study.

Chapter Six presents an overview of the research methodology used to evaluate the financial health of listed food retail companies in the SADC region. It also covers the statistical methods employed, including the sampling techniques applied in the study.
Chapter Seven focuses on presenting the data analysis and the findings of the study. This chapter uses a range of statistical methods to showcase the results and includes a detailed discussion of these findings. It aligns the outcomes with the research objectives and emphasizes the study's contribution to existing theories.

Chapter Eight delivers a summary, conclusions and recommendations of the study based on the research objectives. It concludes the study discussion by proposing a conceptual framework on the factors influencing the financial health of listed food retail companies in SADC, which was the fourth objective of this study.

1.10 CHAPTER SUMMARY

This chapter presented the study's background, articulated the research problem, and outlined the study's aim and hypotheses. It also highlighted the significance of the research, discussed its delimitations and limitations, and concluded with an overview of the thesis structure.

The next chapter seeks to provide an overview of the listed food retail companies.

CHAPTER TWO

OVERVIEW OF LISTED FOOD RETAIL COMPANIES

2.0 INTRODUCTION

The previous chapter presented an overview of the study, followed by the research problem statement, the study's objectives, research hypotheses, and the significance of the research. Also, it addressed the study's delimitations and limitations and concludes with an outline of the thesis structure. However, this chapter presents a detailed review of the literature on the listed food retail companies in the SADC region. Success factors and key challenges facing listed food retail companies in terms of their performance are also identified and discussed. The chapter will conclude with a summary.

2.1 DEFINING LISTED FOOD RETAIL COMPANIES

Food retail companies refers to privately-owned commercial outlets that mainly focus on the sale of food products (including fresh produce, packaged foods, beverages, dairy products, meats, general merchandise, bakery items and other consumables) to clients for their consumption. These entities whose shares of ownership, known as stocks, are traded on a stock exchange of a country. This means that their shares are available for purchase and sale by the general public and investors, allowing individuals to become partial owners of a company by acquiring its shares. Different types of food retail companies will be defined, followed by the definition of listed ones (Masojada, 2021). Different categories of food retail companies are set out below.

Grocery store - this store is identical to conventional supermarkets. Grocery stores specialise as food retailers that offer a full line of food items. These stores can range in size depending on the stock that the company has (Masojada, 2021).

Limited assortment supermarkets – these supermarkets have become very popular in the 21st century. As its name suggests, these stores offer restricted selections of products to consumers and do so at reduced prices. Products they typically offer include, but are not limited to, bread, eggs, dairy, meats, poultry, dry goods, fruits, vegetables, refrigerated and frozen items. These items are often off-brand or store-brand items (Masojada, 2021).

Supercenters – this is a type of large-scale retail store that offers a comprehensive range of products, including food, household goods, clothing, electronics, furniture and other merchandise. These stores classically operate on an expansive floor space and are designed to provide consumers with a convenient one-stop shopping experience (Masojada, 2021).

Warehouse clubs – these are retail stores categorised by offering customers the chance to buy a wide variety of products, including food, household items, electronics and others, often at reduced prices due to the bulk quantities in which products are sold (Masojada, 2021).

Convenience stores - these are retail stores known for their user-friendliness and quick shopping experience. They were intended to provide customers with easy access to a range of everyday items (Masojada, 2021).

Food retail companies generate profit by selling high volumes of products, typically operating with very slim profit margins of 1% to 3%. In contrast, specialty food retailers usually achieve net profits ranging from 5% to 12%. Additionally, food retailers generally work with a gross margin of 25% to 35%, meaning that the cost of their inventory constitutes 65% to 75% of the retail price. The most profitable items for these companies often include prepared foods, vitamins, body care products, fresh coffee, reusable shopping bags, cheese, deli meats, produce, bulk foods, and frozen foods. Selling larger quantities of these items at lower prices tends to yield greater profit than selling fewer items with higher mark-ups. As a result, food retailers focus on minimizing theft and spoilage and keeping labour costs low, often by hiring more part-time employees who receive fewer benefits. Food retailers offer services rather than selling their own products, unless they have an in-house prepared foods section. It is then the store manager's responsibility to offer the services and resources that attract and retain customers (Barbara, 2018).

After the Second World War, substantial transformations have forced the food retailing system towards increasing internationalisation, industrialisation and concentration. While these changes have undeniably resulted in unparalleled levels of food abundance, there is now a widely held agreement that they have brought about

adverse sustainability consequences for both society and the environment. Consequently, there is a growing recognition that systemic shifts towards sustainability are imperative. One alternative frequently advocated for addressing the perceived unsustainability of the globalised food system is the concept of (re) localisation of food systems. This approach emphasises the need to prioritise local food production and distribution, thereby reducing reliance on distant and centralised food sources (Zwart and Wertheim-Heck, 2021). Notably, city authorities in SADC and around the world are taking decisive steps to incorporate food system (re) localisation into their national agendas, recognising the urgent need to promote sustainable practices in the realm of food production and consumption (Regional-strategic-framework, 2022).

Research on food retailing primarily focuses on alternative food networks and grassroots initiatives like farmers' markets and community supported agriculture. Unfortunately, the financial health of food retail companies is often viewed as a problem rather than a potential solution. This is unjust for two key reasons. Firstly, food retail companies, particularly Transnational Retail Corporations, occupy a central role within the global food system, as highlighted by (He et al., 2022). In the SADC countries, these companies serve as the primary source for accessing healthier food options, as reported by (Bizcommunity, 2017). Additionally, in most European member states, there has been a rapid increase in the market share of food retail companies, with an ongoing trend towards greater concentration, as noted by (Vittuari et al., 2021). The Global South is also witnessing a significant rise in the proportion of food purchases made through these retailers, as indicated by (Timmer, 2017). Secondly, formal retailing practices, including listed retailers, are increasingly guided by corporate social responsibility (CSR) strategies. These strategies encompass a diverse range of approaches, as discussed by Chkanikova and Mont (2015), spanning from waste reduction to fair and sustainable sourcing, improving transportation and energy efficiency, addressing animal welfare concerns and promoting healthier lifestyles. As part of these sustainability strategies, food retail companies are increasingly offering reliable local products, as emphasised by Bloom and Hinrichs (2017).

Listed food retail companies are subject to comprehensive legal regulations governing their operations including international, regional and national food laws, which have grown in importance due to several factors: the globalisation of food trade and the

incorporation of new technologies within the food industry. The United Nations International Covenant on Economic, Social and Cultural Rights, established in 1976, upholds the right to adequate food and freedom from hunger, imposing an obligation on states to ensure these rights are upheld (Kasapila, 2023). Ongoing legal discussions at the global, regional and national levels revolve around critical issues of food safety and quality, consumer rights and the responsibilities of states, corporations, food producers and food retailers. However, it is essential to acknowledge that the legal framework governing food retail companies, particularly those listed on stock exchanges, is shaped by the specific laws, regulations and policies of individual countries. Consequently, there can be significant variations in this legal framework from one region to another (Muela-Molina et al., 2021). Nevertheless, as highlighted by Burris and Anderson (2013), there are fundamental aspects that are typically addressed by legal regulations in the context of food retail companies. These encompass areas such as food safety, product labelling, consumer protection, health and nutrition standards, labour laws, financial disclosure requirements, environmental regulations, competition laws, import and export regulations, taxation, intellectual property rights, data protection and privacy rules, as well as ethical and social responsibility standards.

The increasing urbanisation witnessed in many regions of the SADC since the early 1990s, following liberalisation, has led to the spread of listed food retail formats. This transformation has had a notable impact on the retail sector, not only within urban areas but also progressively in semi-urban and rural regions. The expansion of listed food retailers, both on a global scale and within the SADC region, has not been confined solely to geographical scope; it has also encompassed a broader spectrum of retail offerings, catering to consumers across various income brackets (das Nair, 2021). As illustrated in Figure 1, contemporary listed food retail companies have embraced modern, specialised supply chain practices. These methods often involve the engagement of procurement agents or direct sourcing from farmers and processors (Das Nair and Dube, 2016). As for Rosenbloom and Mollenkopf (2020), specialised agents and wholesalers play a pivotal role as ‘channel captains’, establishing relationships, whether through formal contracts or informal agreements, between food retail companies and processors or farmers to ensure quality and consistency. As a result, these dedicated procurement agents and wholesalers prove to be highly

efficient by reducing stock procurement costs. They are crucial in maintaining private standards and enforcing contractual agreements between food retailers and their suppliers. However, this change in dynamics has shifted power from small-scale farmers and processors to supermarket chains. Consequently, food retail companies gain more direct influence over factors like delivery terms, pricing, quantities and product quality. Nevertheless, as noted by Altenburg et al. (2016), this shift has the unintended consequence of narrowing the supplier base to selected suppliers and bypassing traditional wholesale markets.

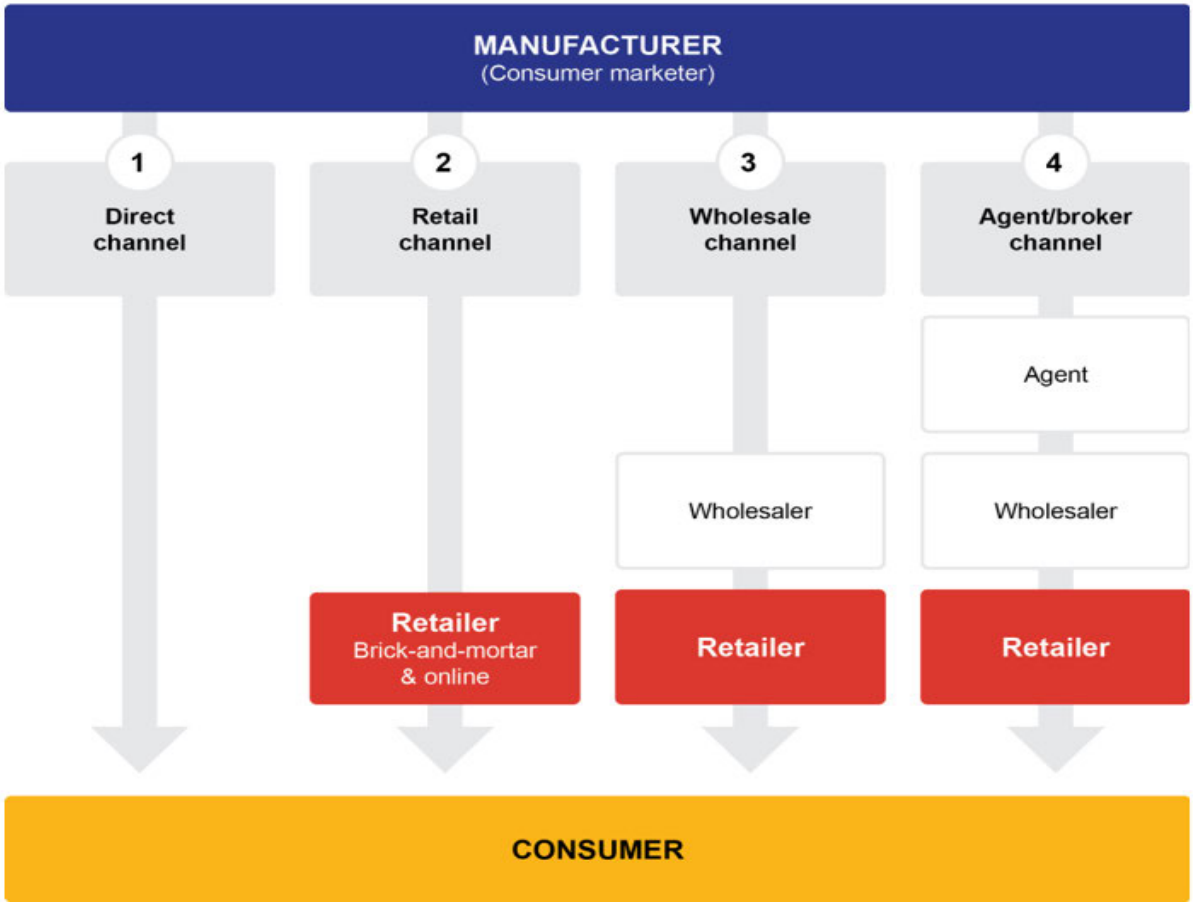

Figure 2. 1: Structure of the food retail sector

Source: (Ngobeni, 2009)

Listed food retail companies employ varying procurement structures depending on the categories of products they offer. Typically, these retailers source their meat, dairy and processed food products from medium- to large-scale suppliers. Similarly, fresh produce is predominantly sourced from medium- to large-scale farmers, as highlighted by Singh et al. (2021). This approach offers a significant advantage to larger-scale

farmers in developing countries, especially those targeting export markets. It's important to recognize that food retail companies typically source indirectly from smaller farmers through intermediaries such as wholesalers and processors. Among these smaller-scale farmers, those with superior capital assets, access to critical infrastructure, and a more commercial focus often employing hired labour and using chemical inputs tend to be more competitive (Reardon and Gulati, 2008, Ochieng and Ogutu, 2022). Food retail companies generally favour procuring from large suppliers to minimise transaction costs. Large suppliers possess the capacity to fulfil the demands of an entire food retail chain, ensuring an adequate supply of products with consistent quality. This practice is underscored by Ochieng and Ogutu (2022). However, it is worth noting that these prevailing procurement practices have substantial implications for the development of suppliers within the value chain. Suppliers face significant pressures related to their ability to meet volume requirements, maintain consistency, uphold product quality and manage the cost of supplying products, among other factors, as discussed by Das Nair (2018).

The global spread of supermarket chains has dramatically altered how consumers purchase essential groceries and household items, while also shaping the development of supply chains. The first wave of this transformation began in the early 1990s in relatively affluent areas, including Brazil, Argentina, Chile, parts of Central Europe (such as the Czech Republic), and East Asia (excluding Japan and China). During this period, the market share of food retail companies experienced a substantial surge, escalating from 10% to 20% in the early 1990s to a remarkable 50% to 60% by 2004. In specific European countries, this percentage even soared to 80%. Although there is some debate about South Africa's involvement in the initial wave, studies suggest its inclusion (Reardon and Hopkins, 2006). During this period, the proportion of food retailing conducted through supermarkets in these regions experienced notable expansion, surging from 5% to 10% in the 1990s to a varying range of 30% to 50% by 2004 (Nair, 2019). The subsequent phase of this expansion reached regions such as Mexico, Central America, South Africa, Southeast Asia and south-central Europe (Nair, 2019). In the second phase of growth, African countries primarily saw a significant influx of foreign direct investment (FDI) from South Africa. According to the predictions made by Weatherspoon and Reardon (2003), a notable trend was predicted to emerge, characterised by substantial FDI from global multinational corporations such as Ahold,

Walmart and Carrefour. These corporations had already established a strong presence in Latin America and it was anticipated that they would expand their operations into Africa around 2008. This forecast envisioned the entry of global multinational food retail chains into the African market by approximately 2010, resembling the patterns observed in Latin America, East and Southeast Asia.

Reardon et al. (2007) state that the third wave outspread in the early 2000s, spanning across India, China, less affluent Latin and Central American nations and Eastern Europe. In this era, the portion of food retailing conducted through supermarkets witnessed swift growth, rising from 10% to 20%. According to Nair (2019), the latest 4th trend emerged in the mid-2000s, impacting Southern and East African countries (excluding South Africa and Kenya) along with several South Asian nations. Das Nair (2018) reveals that the expansion of food retail companies during the fourth wave in Africa had, until recently, primarily occurred through FDI originating from larger African economies like South Africa. The globalisation of food retailers holds significant implications for both consumers and suppliers. These companies provide customers with a comprehensive shopping experience that encompasses a wide array of products, offering more than just physical goods. The goal is to reduce costs for customers. Healthy competition among food retail companies yields benefits for consumers in the form of reduced prices, enhanced convenience and greater quality and variety of choices. Various factors, including economic, environmental, social, political and cultural elements within each country, play a crucial role in shaping the international expansion of food retail companies.

Nonetheless, as per Nair (2019), the existing studies tend to fall short in their comprehensive examination of how these factors influence the internationalisation of food retail companies. Instead, they tend to place more emphasis on the internationalisation of manufacturing companies. However, it is crucial to furnish sufficient insights to elucidate why food retail companies thrive in certain countries within the region while facing challenges in others. Furthermore, there is a need to understand why these companies might adopt distinct strategies within the same chain when operating in different countries. Additionally, the current research does not shed light on the advantages that regional chains may possess over their global counterparts. Lall et al. (2017) report that after the fourth wave, Africa is experiencing

rapid urbanisation. This is happening because more people are being born and many are moving from rural areas to cities. Some experts predict that by 2050, over 55% of Africa's population will live in cities, growing from about 340 million in 2015 to an estimated 712 million in 2050. As per a Habitat (2019) report, residents in secondary cities throughout Africa encounter diverse challenges associated with the economic, social and environmental conditions of their respective countries. It is notable that the report on food security is addressed only once, which could potentially lead to misinterpretation.

Riley and Crush (2022) contend that this exclusion stems from a bias within the global food security agenda, which tends to view food insecurity primarily as a rural issue, neglecting its impact in urban areas. However, there is an increasing consensus among researchers, including the African Food Security Urban Network (AFSUN) and others (Riley and Crush, 2022, Battersby and Watson, 2019, Souza et al., 2018), that food insecurity is emerging as a critical issue in African cities. Research suggests that the expansion of formal food retail companies can have adverse effects on informal food retailers. However, studies demonstrate that informal food retailers in African countries, including those in the SADC, have demonstrated significant resilience and growth in meeting the daily food needs of low-income households, despite facing stringent regulatory challenges (Crush and Tawodzera, 2017).

According to Das Nair (2018), the initial African countries to undergo an expansion of food retail companies were South Africa and Kenya. This was followed by a subsequent wave of growth in Angola, Botswana, Swaziland, Mauritius, Namibia, and Mozambique

2.2 THE MAIN MULTINATIONAL LISTED FOOD RETAIL COMPANIES IN SADC

2.2.1 Shoprite Holdings Ltd

The most widespread privately-owned supermarket chain within the SADC region in terms of store numbers is Shoprite Holdings Ltd. The company's journey began in 1979 when Pep Stores acquired a small, family-owned grocery business with just eight stores in the Western Cape. Over the years, Shoprite has expanded its scope and currently operates nearly 2 900 outlets spanning across 16 countries within the SADC region, significantly contributing to employment. Shoprite Holdings Ltd is a major player

in the food retail sector and is publicly listed. Its headquarters are situated in the Western Cape province of South Africa. Among its 12 subsidiaries, key food retail brands include Checkers, Checkers Hyper and Usave. Shoprite caters to diverse income groups, tailoring its store formats to meet the specific needs of these various segments throughout the SADC region. Checkers and Checkers Hyper stores are oriented toward catering to high-end, rich consumers, while Shoprite places its focus on the broader middle-to-lower end market segments. Shoprite Usave is designed to serve lower-income segments and also acts as a means for expanding its presence into economically disadvantaged communities. (Nair, 2019, Masojada, 2021).

2.2.2 Pick n Pay Stores Ltd

Established in 1967, Pick n Pay Stores Ltd currently holds the position of the second-largest privately-owned retailer in the SADC region, with Shoprite leading the way. Pick n Pay has diversified its operations across various sectors including liquor, clothing, fast food, entertainment catering, pharmacy services, travel, financial services, utilities and service payment facilities. Over the past decade, Pick n Pay has particularly focused on expanding its online commerce, primarily in urban areas. Across all its formats in the SADC region, Pick n Pay boasts a network of nearly 2 000 stores. A distinctive aspect of Pick n Pay's approach is its ability to customise store designs to align with the income groups within the communities they serve. For example, among its 2 000 stores, 49% are TM Supermarkets in Zimbabwe, contributing to the creation of over 80 000 jobs. In South Africa, Pick n Pay operates various store types, including Hypermarkets, Supermarkets, Family Franchise stores, Butchery outlets and 'Express' franchise stores, which are compact convenience stores situated on the forecourts of BP Southern Africa locations, as per their contractual agreement. Similar to Shoprite, Pick n Pay initially focused on targeting lower-income consumers to expand its market presence. As a result, Pick n Pay acquired Boxer Superstores in 2002. However, like other retailers, including Shoprite, Pick n Pay has also begun to introduce premium stores designed to cater to the highest-income consumer segments (Nair, 2019, Masojada, 2021).

2.2.3 SPAR Group Ltd

Ranked as the third-largest food retail company within the SADC region is SPAR Group Ltd. This privately-owned retail specialises in offering food products and other

merchandise. Its operational model is predominantly based on a voluntary trading system or franchise system. The primary SPAR stores include SuperSPAR, SPAR, KwikSPAR and SaveMor, designed to cater to a wide range of income groups. SaveMor specifically targets rural and township markets, offering existing small-store owners the opportunity to convert their stores into SaveMor franchises. In 2013, SPAR expanded its presence by launching forecourt convenience stores, branded as SPAR Express, in partnership with the oil company Shell. Beyond its core food retail offerings, SPAR also includes liquor outlets under Tops and SaveMor Liquor, as well as building and hardware stores and pharmacies. Every store within the SPAR network operates autonomously while proudly bearing the SPAR name. The early years of SPAR are closely intertwined with the vision of Adriaan van Well, an innovative Dutch wholesaler. In 1932, he embarked on this journey with a single market in the Netherlands. SPAR's South African chapter began in 1963 when eight wholesalers secured exclusive rights from SPAR International (the Netherlands) to use the SPAR name and brand in serving small retailers (Nair, 2019, Masojada, 2021).

The SPAR Group currently operates seven distribution centres that efficiently supply goods and services to a wide network of more than 2,000 stores in 10 Southern African countries. While some SPAR franchises in these nations stay connected with the SPAR International group, they rely on critical services from South African distribution centres. SPAR South Africa holds licenses for operations in four countries within the region. The company's workforce includes over 3,800 employees across its corporate offices and distribution centres in South Africa, while franchise stores throughout the region create job opportunities for tens of thousands of additional workers. Notably, SPAR boasts a staggering total of over 13 900 stores, collectively serving 14.7 million customers each day (Nair, 2019).

2.2.4 Woolworths Holdings Ltd

Woolworths Holdings Ltd is the fourth largest privately owned retail chain in the SADC region, based on its store numbers. Woolworths Holdings Ltd began in South Africa, where it emerged as a chain retail company, opening its first Woolworths store in Cape Town back in 1931. By 2014, Woolworths had established a presence in SADC countries, including South Africa, Eswatini, Lesotho, Tanzania, Mauritius, Zambia, Mozambique and Namibia. The company specialises in offering premium food and

clothing products, with a dedicated focus on high-income clientele. Woolworths has since expanded its operations to encompass 12 countries within sub-Saharan Africa, as well as in New Zealand. With a workforce exceeding 46 000 employees, Woolworths operates in a network of over 1 500 store locations. While Woolworths includes a grocery retail division, it also boasts clothing operations through David Jones and the Country Road Group, active in South Africa, Australia and New Zealand. Furthermore, Woolworths has entered into a joint venture with Barclays Africa Group, wherein Barclays Africa Group holds a majority share of 50% plus one share in Woolworths Financial Services. In a fashion akin to Pick n Pay and SPAR, Woolworths in the SADC region has expanded into convenience stores, known as Woolworths Foods, situated at Engen fuel forecourts. The group places a strong emphasis on delivering superior quality and product innovation and exclusively caters to high-end, affluent consumers (Nair, 2019, Masojada, 2021).

2.2.5 Other stores unlisted in the SADC

Fruit and Veg City Holdings (FVC) is the fifth-largest food retailer in terms of store numbers within the SADC region. Its journey of expansion began in 1993 with the opening of its first store and by 2007, it had already established approximately 80 stores across the nation. As of 2023, FVC has a network of 128 stores in 11 countries across Southern Africa and Australia and employs more than 16 000 workers as reported by das Nair (2021), (Nair, 2019).

The Massmart Group was founded in South Africa in 1990, with Makro as its original entity. In a significant development, Walmart, the US-based retail giant, acquired Massmart in 2012, following approval from South African competition authorities, albeit under specific conditions. This marked the entry of the second transnational corporation into the country. The Massmart Group's operations span 11 countries within the Southern African region and provide employment for not less than 48 000 employees, contributing to SADC patterns of supermarketisation. The Massmart group offers a comprehensive array of offerings, spanning various sectors. These include various services such as general merchandise and liquor retail under the Game and Cambridge brands, food retail through a combined wholesale and retail model at Makro, and a similar approach at Jumbo Cash and Carry. Additionally, Trident and Rhino specialize in food and general wholesale for lower-income consumers, while

Shield operates as a voluntary buying association. Fruitspot manages the wholesale and distribution of fresh and pre-cut fruits and vegetables. DionWired offers high-end appliances and equipment, and Builders Warehouse, Express, Superstore, and Trade Depot focus on DIY, home improvement, and building materials. Walmart entered the food retail sector in 2013, intensifying competition with existing players, particularly through the Game brand (Nair, 2019).

Choppies Enterprises Ltd, a food and general merchandise retailer from Botswana, opened its first store in 1986 and now operates 218 stores across eight Southern and East African countries. It manages 10 distribution centers and employs over 17,000 staff. The company offers three main store formats, Hyper Stores, Super Stores, and Value Stores, providing a wide range of products, including food, groceries, clothing, and more. Choppies also offers value-added services like financial transactions at checkout. While the focus is on low-to-middle-income consumers, the company is expanding its appeal to middle-to-upper-income groups (Nair, 2019).

2.3 THE LISTING REQUIREMENTS OF CORPORATIONS IN THE STOCK EXCHANGES

To secure a position for trading on a stock exchange, a company is required to meet specific standards established by the exchange itself. When a company chooses to list its securities on a stock exchange, it must apply to that exchange. The listing requirements encompass several criteria, including net profit, cash flow, market capitalization, shareholders' equity, and total assets (KPMG, 2014/2015). Nevertheless, according to Murison (2023), the retail sector has experienced underperformance attributable to socio-economic challenges in the region, posing difficulties for them in maintaining the listing requirements. Despite the challenges associated with listing, KPMG (2014/2015) reports that the specific procedures for applications can differ among exchanges. However, a common initiation in the processes of listing on a stock exchange is for the management team of a company to assess the suitability of the current entity structure, corporate governance and financial procedures for a publicly traded entity. Management also needs to assess whether the chosen jurisdiction imposes specific legal or exchange control prerequisites for listing and determining the adequacy of the existing company and tax structure for a listed

entity. Additionally, it is crucial to ascertain whether any restructuring is necessary. Moreover, the management should evaluate the presence of a robust, standalone financial track record adhering to IFRS or other acceptable standards stipulated by the selected stock exchange (KPMG, 2014/2015).

In 2006, the SADC instituted the protocol on finance and investment with the objective of advancing economic integration across Southern Africa. A key provision of the protocol entails member states' obligation to support the development and enlargement of capital markets, fostering collaboration in the maintenance and regulation of existing stock exchanges. The ultimate goal of these initiatives within SADC is to create harmonised securities markets spanning the region, with the overarching objective of attracting investments and positioning the regional economy for global competitiveness (SADC, 2006). As of 2023, SADC had a total of 14 stock exchanges situated across various regions. These include Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Eswatini, Tanzania, Zimbabwe and Zambia (SADC, 2023a).

Listing a company is a challenging processes, according to MATEI and ANTON (2022). Several factors warrant consideration before opting for listing on a stock exchange, with key aspects encompassing evaluating domestic capital and debt funding availability in the chosen country. This involves scrutinising banking institutions, total banking industry assets, equity investment funds, pension funds, the value and growth of pension assets, as well as the history of bond issuances over the past three years in the target country. Furthermore, understanding the listing criteria of the selected stock exchange is crucial, including an assessment of whether the company aligns with the stipulated requirements, taking into account factors such as size, maturity, sector and industry of the applicant issuer (KPMG, 2014/2015).

	BSE	JSE	LuSE	SEM
Exchange rate				
As at 30 June 2014	US$1 = BWP8.69414	US$1 = ZAR 10.6344	ZMK1 = ZMW1 000 and US$1 = ZMW6.11845	US$1 = MUR30.3565
Registration				
Foreign applicant issuers	› Duly incorporated or validly established under the law of the country of incorporation or establishment; and › Operating in accordance with its Constitutional Documents and laws of its country of incorporation or establishment.	› Duly incorporated or validly established under the law of the country of incorporation or establishment; and › Operating in accordance with its Constitutional Documents and laws of its country of incorporation or establishment.	Must open and maintain a transfer office in Zambia while their securities are listed on the LuSE.	› Duly incorporated or validly established according to the relevant laws of its place of incorporation or establishment; and › Operating in conformity with its Constitutional Documents.
Listing authority				
	› Minister of Finance; › BSE; and › BSE Committee.	› South African FSB; › JSE; and › JSE Board.	› Zambian SEC; › LuSE; › LuSE Committee; and › LuSE Board.	› SEM; › Listing Executive Committee;
Listing Criteria				
Subscribed capital or market capitalisation	Subscribed capital of at least US$575 100 (BWP5.0 million) (previously US$115 020 (BWP1.0 million)).	Subscribed capital of at least **US$4.7 million (ZAR50.0 million)**	Subscribed capital of at least US$40 860 (ZMW250 000 or ZMK250.0 million).	Aggregate market value of the equity securities for which application for listing has been made must be at least US$0.7 million (MUR20.0 million).
Equity shares in issue	One (1) million	Twenty five (25) million	One (1) million	N/A

Figure 2. 2: Factors to be considered for listing
Source: (KPMG, 2014/2015).

Despite the associated advantages, such as accessing equity capital for project funding and acquisitions, providing investors with a time-based exit route and ensuring uniform and monitored share transactions, there are notable drawbacks. These drawbacks include restricted management control due to sensitive shareholder protections, increased oversight by statutory and regulatory authorities, augmented financial and reporting obligations and elevated costs attributed to the listed status and additional regulatory requirements (KPMG, 2014/2015). These disadvantages are significant and often influence the feasibility of emerging retail businesses in seizing the opportunity for listing.

2.4 THE POTENTIAL OF LISTED FOOD RETAIL COMPANIES TO SPUR SADC DEVELOPMENT

Over the last two decades, countries within the SADC region have witnessed a remarkable growth in the number and spread of food retail companies listed on the stock exchange. Supermarkets first appeared in South Africa and Kenya, followed by

a subsequent expansion into Zimbabwe, Zambia, Namibia, Botswana, Swaziland, Mauritius, Mozambique, and later Uganda and Tanzania. In West Africa, countries like Ghana and Nigeria are also experiencing growth in supermarkets, though independent retailers and wet markets remain prevalent (Das Nair, 2018). The second wave of supermarket expansion in Africa has been mainly driven by foreign direct investment (FDI) from South Africa. Weatherspoon and Reardon (2003) noted that while global multinational enterprises (MNEs) such as Ahold, Walmart, and Carrefour had significantly impacted Latin America, this trend had not yet reached Africa. They anticipated this shift might occur around 2008, a prediction that proved largely correct as Walmart entered Africa through a merger with South Africa's Massmart, Poundstretcher from the UK expanded into Zambia, and Carrefour from France moved into Kenya, all post-2008.

The expansion of food retail companies in the SADC region has extended beyond urban areas, contributing to the development of rural and peri-urban regions (Black et al., 2021). These retail companies have emerged as significant drivers in enhancing local food production and manufacturing sectors within the region. As per the findings of Phiri and Ziba (2019), the presence of listed food retail companies has bolstered the value chain and significantly contributed reduced reliance on overseas imports by fostering greater intra-regional trade. Moreover, their activities have generated significant employment opportunities. As pointed out by Ismail (2022), the proliferation of listed food retail companies in the SADC region holds substantial benefits for both consumers and suppliers. Black et al. (2021) reveal that the growth and competition among listed food retail companies improves pricing, product quality, accessibility, choice of products and services accessible to consumers. For regional suppliers like farmers, agro-processors and light manufacturers, the expanding network of food retail companies offers increased opportunities for active involvement in regional value chains. This, in turn, enables suppliers to scale up their operations and develop their capabilities, aligning with the industrialisation goals of numerous African nations to produce higher-value products. Additionally, it serves as a stepping stone for suppliers to elevate their standards and potentially engage in global value chains, with significant implications for employment in the agriculture and manufacturing sectors.

2.5 SADC REGION PARTICIPATION IN GLOBAL VALUE CHAINS (GVC)

Global Value Chains (GVCs) encompass the full range of activities from raw materials to final consumption, with each participant adding value. While cross-border production has existed for some time, it has grown rapidly in recent decades, largely driven by transnational corporations in developed countries (Black et al., 2021). Adnan and Yee (2019) posit that countries can participate in GVCs through backward linkages, by importing inputs for domestic production, or forward linkages, by supplying inputs used in production abroad. According to De Backer and Miroudot (2014), while trade in goods across countries demonstrates the extent of market integration, a common challenge with the data is that it does not easily show how companies globally are linked into production networks, whether GVCs or RVCs.

Lenzen et al. (2013) and Black et al. (2021) suggest that the UNCTAD-Eora Global Value Chain Database is a valuable resource for assessing SADC countries' involvement in Global Value Chains (GVCs), as it offers extensive coverage of value-added exports across African nations. However, this dataset has some limitations, including incomplete input and output tables for certain African countries, which are estimated. Additionally, it does not provide detailed information on the specific relationships among the companies within the supply chains, meaning that trade flows might not fully represent the actual value chains. Therefore, the data is mainly used as a general indicator of SADC countries' participation in value chains.

Two main pointers are utilized for evaluation. The foremost focuses on backward integration, which is determined by the percentage of foreign value added (FVA) in overall exports. A higher percentage indicates greater involvement of exporters in downstream activities (Black et al., 2021). Farole (2016) argues that backward integration provides access to high-quality inputs and advanced global technologies, enhancing downstream competitiveness and productivity. Black et al. (2021) describe forward integration through the measure of indirect value added, which assesses the domestic value added in intermediate inputs that are exported and used in the production of other countries' exports, relative to gross exports. In developing countries, significant forward integration is typically linked to resource exports, with firms often situated at the upstream end of the value chain.

Figure 1 illustrates backward integration as the share of foreign value added in gross exports, while forward integration is shown as the domestic value added in intermediate inputs used in other countries' exports relative to gross exports. SADC has higher GVC participation due to the mining sector, whereas backward participation comes from the manufacturing industries such as automobiles. Markowitz and Black (2019) share that in 2019, SADCs forward participation in global value chains nearly doubled its backward participation (as depicted in Figure 1). Nevertheless, owing to SADC's robust manufacturing sector, the regions backward participation continued to surpass that of other African regions. In 2015, three industries within the SADC region stood out with the highest levels of both backward and forward participation in GVC. These sectors, ranked from highest to lowest, included mining or quarrying, metal products, and petrochemicals or minerals. It's significant that all three demonstrated substantially greater forward integration than backward integration. In the mining industry, forward participation was more than 2.5% greater than backward participation. It is worth noting that the origin of GVC varies among SADC countries.

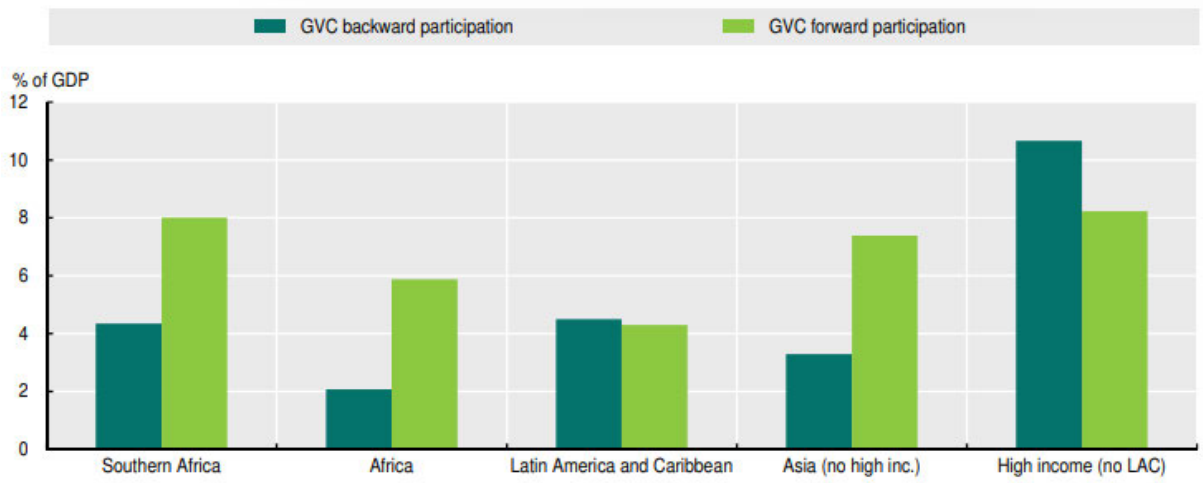

Figure 2. 3: Total backward and forward global value chain (GVC) participation, Africa and Southern African compared with other world regions, 2029
Source: Markowitz and Black (2019).

The existing statistics do not encompass data related to food products and there is a presumption that SADC countries face a deficiency in industrialisation. This notion finds support in the works of Markowitz and Black (2019) and Staritz et al. (2019), which highlight that in the SADC region, the service sector contributes nearly half of the region's GDP, thus serving as the primary catalyst for regional economic growth.

Nonetheless, GVCs are inherently competitive and beneficial, offering developing countries' companies the opportunity to participate in meaningful ways, as emphasised by Bamber et al. (2014). Yet, many less affluent nations encounter the challenge of establishing certain prerequisites for GVC integration. These prerequisites include, but are not limited to, open trade and investment frameworks. Additionally, the development of human capital, access to capital, improvement of the business environment, infrastructure enhancement and the elevation of institutional quality have all been identified as critical factors hindering poor countries to participate in GVC (Markowitz and Black, 2019).

2.6 SADC REGION PARTICIPATION IN REGIONAL VALUE CHAINS (RVC)

This implies that South African companies are not fully capitalizing on Regional Value Chains (RVCs) to boost their export performance. Moreover, South Africa's forward linkages within the SADC region are notably weak, with the indirect value-added from SADC countries contributing, on average, just 2% to each country's total exports. This suggests the presence of short RVCs, where regional inputs are mainly used to produce final goods for domestic consumption or export (Black et al., 2021). More broadly, existing research shows that while SADC countries are integrated into Global Value Chains (GVCs), their participation largely focuses on exporting natural resources. As highlighted by Markowitz and Black (2019), the service sectors in the SADC region account for nearly half of the region's GDP, making them the primary drivers of regional economic growth, alongside food retail companies. It is important to highlight that within SADC countries, intra-regional exports primarily centre around manufactured goods, then it is the case with the broader export landscape. Consequently, intra-SADC trade levels are increasing as a proportion of total trade, signifying the emergence of RVCs. Additionally, there are noticeable instances of robust export growth in manufactured goods from other SADC countries to South Africa. These developments, to some degree, indicate the emergence of RVCs in the region (Black et al., 2021).

The narrative of SADC's share in global trade during the latter half of the 20th century was characterised by a decline in its global market presence, a phenomenon observed by Amjadi et al. (1996). However, a significant shift occurred starting in the year 2000,

when the value of exports from SADC countries increased notably, primarily attributable to the global commodity price boom. Commencing at just under US$50 billion in the year 2000, SADC exports rapidly ascended, reaching a peak of US$225 billion by the year 2011. Nonetheless, they subsequently declined to US$168 billion in the year 2017, largely due to the collapse in commodity prices. These trends in SADC's share of global exports closely mirrored this trajectory. Regionally, trade within SADC demonstrated robust growth during this period, both in terms of its overall value and as a percentage of total exports. It climbed from 20% in the year 2000 to 25% by 2016, with particularly noteworthy expansion from 2011 onward (Gniniguè et al., 2023). This rise in exports can be attributed to the region's overall economic growth and the reduction of tariff barriers, a consequence of the implementation of AfCFTA that commenced in year 2000, as noted by Kowalski et al. (2015).

As for imports, the proportion of intra-SADC trade initially saw a decline until the mid-2000s but then experienced a resurgence, ultimately reaching 23% by the year 2016. Consequently, the period following 2000 is characterised by the rising significance of Southern Africa in the realm of global trade, along with an escalating level of integration within the regional market (SADC, 2022). Gniniguè et al. (2023) state that the emergence of the COVID-19 pandemic in year 2020 had a dampening effect on intra-SADC trade due to lockdowns and travel restrictions. Nevertheless, there has been an improvement in SADC intra-trade, which has risen to 23%, up from 19% in 2021, as reported in the African Union (AU) Regional Integration Report for 2021 (Union, 2021). However, the share of manufacturing value added in GDP, which includes food retailing, remains below 12%, falling short of the target of 30% by year 2030 and 40% by year 2050. Most SADC member states still rely heavily on agro-based and mining commodities in terms of their contribution to GDP (Black et al., 2021).

The economies of SADC member states exhibit diverse levels of development, leading to significant variations in the state of industry across the region. While agriculture is a major economic contributor in many member states, employing nearly 50% of the region's population, it primarily consists of subsistence farming rather than large-scale, high-value crop cultivation. In contrast, the mining sector, which employs only 5% of the population, plays a pivotal role by contributing a substantial 60% to foreign exchange earnings and 10% to the GDP of the SADC Region (SADC, 2022). South

Africa remains the dominant economic force in the SADC region, contributing around 50% of the total GDP, with Angola following at 15% (Moyo, 2023). In contrast, all other countries, except the DRC and Tanzania, made up less than 4% each of SADC's GDP in 2019. Over the period from 2011 to 2020, annual GDP growth rates varied significantly among countries. Only Mozambique, DRC and Tanzania achieved growth rates of at least 5%, while South Africa and Angola experienced growth of less than 2% (Gehring et al., 2022). Consequently, all countries fell short of the SADC's macroeconomic convergence target of 7% annual GDP growth for the period 2013–2018 (Africa-development-group, 2019). This shows that SADC countries display a trend of importing more goods and services than they export, with nearly all countries, except eSwatini and Botswana, consistently running negative current account balances. Particularly noteworthy are Malawi, Mozambique and Seychelles, which have been grappling with relatively substantial current account deficits exceeding 16%. These deficits surpass the region's convergence target of 9%, as outlined by ADB (2023) and Africa-development-group (2019).

As far as listed food retail companies are concerned, the current state of intra-trade in the SADC region presents both opportunities and challenges for food retail companies. It can develop markets, improve supply chain efficiency and provide access to a broader range of products. However, it also requires companies to navigate regulatory differences, sustain quality and safety standards and compete with a broader range of retailers.

2.7 CHAPTER SUMMARY

This chapter provided an in-depth review of the literature pertaining to listed food retail companies in the SADC region. It identified and discussed success factors and key challenges facing these listed food retail companies in terms of their performance.

The following chapter presents a literature review on the financial health of companies.

CHAPTER THREE

FINANCIAL HEALTH

3.0 INTRODUCTION

While the previous chapter presented a detailed review of the literature on the listed food retail companies in the SADC region and the success factors and key challenges facing these companies in terms of performance, the current chapter seeks to present a compilation of the literature that supports the proposition that economic status is a substance for enhanced company financial health. Recent studies reinforce the findings, resonating the conclusions of Nguyen et al. (2023), Baldwin (2012), (Geneva, 2013, Outlook, 2014, Foster-McGregor et al., 2015) and the insights of (Das Nair, 2018, Das Nair and Dube, 2016). These studies regard internal and external factors as crucial determinants of financial health in both the for-profit and not-for-profit sectors. The existing literature encompasses numerous theories that have significantly contributed to the understanding of company financial health. In this chapter, we delve into theoretical perspectives that are not only relevant but also applicable to the framework of this study. Of paramount importance is the need to substantiate the theoretical foundations that shed light on the factors influencing financial health. These dimensions will play a pivotal role in the empirical data analysis undertaken in this thesis. Ultimately, they will contribute to the construction of the conceptual framework outlining the factors that impact the financial health of the listed companies within the SADC region. The structure of this chapter unfolds by initially exploring the evolution of financial health. It then proceeds to examine the contemporary landscape of finance, delves into the conceptualisation of financial health, assesses the present status of financial health evaluation and engages in a discourse concerning financial ratios and financial health theories. The culmination of this chapter arrives at a concise summary.

3.1 DEVELOPMENT OF FINANCIAL HEALTH

The development of the financial health analysis approach adopted in this study draws upon the foundations laid by Jensen and Smith (1984), Famá and Galdão (1996) and Archer (1969). While acknowledging the significance of contributions by other authors, Table 2.1 provides a concise summary of the evolving literature in the field of financial health analysis.

Table 2.1: A summary of the evolution of the financial health function

Approach		**Period**	**Events**	**Financial theory**
Archer and D'Ambrosio	**Smith (Clifford)**			
Traditional	Normative	Early 20th century	Movement toward corporate consolidation	Concentrate on the capital structure and significant financial events.
Managerial	Positive	1920s - 1960s	Expansion of new industries Merger process	Deal with economic construction Liquidity reflections Preliminary discussion on planning and control
			1929 crash	Maintain liquidity, and achieve financial
			World War II	Significance of capital raising
			Fear of post-war recession	Prominence on cash movement versus profitability Internal financial controls
Economic			Technological development (computing) Growth of international trade	Modigliani and Miller (1958) and the insignificance of dividends and capital structure Capital costs
		1970s	Technological development (computing) Collapse of the Bretton Woods Agreements 1974 US stock market crash US oil and inflation increasing.	Interest in the theories of Markowitz, Tobin and Sharpe CAPM and systematic and non-systematic risk
		1980s	External debt crisis: developing countries declare debt moratorium, financial crisis Financial disintermediation and M&A activity Basel Accord I (1988)	Greater interest in the Black-Scholes option pricing formula Derivatives strategies

Approach		Period	Events	Financial theory
Archer and D'Ambrosio	**Smith (Clifford)**			
		1990s – 21st century	Globalisation of the economy and intensification of transaction volume	Hedging strategies
			Increased interdependence among economies	Reduction of systematic risk
			The Bank for International Settlements (BIS)creates the Committee on Payment and Settlement Systems (CPSS).	Value creation
			Mexican financial crisis (1994–1995)	Corporate Governance
			Asian financial crisis (1997–1998)	Social and environmental responsibility
			Russian financial crisis (1998)	Corporate ethics in finance
			Reformulation of the Basel Accord (Basel II) (1998)	Behavioural finance
			Cases:	
			Metallgesellschaft, Barings Bank and Long-Term Capital Management	
			Argentine financial crisis (2001–2002)	
			US accounting scandals (Enron, Tyco, WorldCom, etc.)	
			US subprime mortgage crisis	

Source: Jensen and Smith (1984), Famá and Galdão (1996) and Archer (1969)

3.1.1 FROM THE 1920S TO THE 1960S

During the 1920s, there was notable progress in the emergence of new industries, accompanied by an increased focus on merger activities. While this era experienced growth, it was also marked by price volatility and resource scarcity, underscoring the importance of effective capital structure management. Studies on liquidity, budgeting techniques and financial recovery gained prominence, especially in the aftermath of the 1929 crash, as highlighted by Saito et al. (2013). The expansion of the financial health domain has placed a significant burden on companies, leading to a substantial increase in their administrative workload. This period also marked a pivotal moment in

the history of technical business management. Specifically, between 1960 and 1970, a revolution in business and administrative data processing took place, characterised by the emergence of large-scale computer systems. Subsequently, in the 1980s, the introduction of networking, micro-computers and digitisation further reshaped industries into extensive, interconnected systems, positioning them at the core of the information technology revolution (Scott Jr and Martin, 1975).

The traditional approach held sway until the conclusion of World War II, with a primary focus on matters related to capital structure and financing processes, as noted by Archer (1969). During this period, significant attention was directed towards resource management. However, the early 1950s ushered in a period of rapid economic growth, emphasising internal controls related to debtors, creditors and inventory, as noted by Weston (1981). Consequently, the post-war era witnessed a shift in the focus of finance studies transitioned towards a greater emphasis on internal procedures and a heightened concern for organisational structure, characteristic of the administrative approach, as outlined by Archer (1969). In addition to the acquisition of resources, the management of cyclic assets gained prominence during this economic phase. Companies were compelled to enhance their organisational performance, prompting the evolution of financial management in this aspect (Saito et al., 2013).

3.1.2 THE EARLY 20TH CENTURY

The early 20th century financial health theory was primarily characterised by the traditional approach, which placed emphasis on significant events in corporate financial activities rather than routine management issues, as noted by (Archer, 1969). During this phase, the development of the financial health function was a response to corporate consolidation and the growth of the US domestic market, driven by the construction of major railway networks in the late 1880s. Additionally, the emergence of large industrial conglomerates with substantial financial resource requirements for their operations prompted managers to focus on capital structure related decisions, as noted by (Weston, 1981). Carter (1914) further concludes that the primary concern of financial managers during this period was to safeguard the company from bankruptcy and support its financial restructuring.

3.1.3 THE MODERN FINANCE

In the early 1950s, the foundations of modern finance were laid through the emergence of two significant streams of thought. The first stream, known as Corporate Finance, was pioneered by Modigliani and Miller (1958) in their ground-breaking work. The second stream, which delves into three critical areas focusing on portfolio analysis, risk assessment and return studies, was initiated by Markowitz (1952). While this second stream had notable proponents like Tobin and Sharpe, its full significance was not widely acknowledged until the 1970s (Saito et al., 2013).

3.2 CONCEPT OF FINANCIAL HEALTH

Financial health pertains to the evaluation of a company's financial performance within a specific timeframe. It encompasses three categories of business operations: manufacturing, trading and services. Manufacturing is concerned with the transformation of raw materials into end products. Trading focuses on the sale of finished goods or services, including distribution channels and retail aspects. Services revolve around service fees, convenience and security. It is imperative that all business activities maintain a good financial performance (Van Horne and Wachowicz Jr, 2001). Mondal et al. (2016) provide a definition of good financial performance as an indicator of a company's robust financial state and its capacity to yield returns on invested capital. Achieving this entails the implementation of effective resource management and control. However, a company's returns should not come at the detriment of other stakeholders. This underscores the necessity for companies to address various other aspects, including social responsibility, governance and the environmental in which they operate (Weetman, 2019). The interpretation of financial health can vary considerably and its definition is often contingent on the specific industry under consideration.

Given that this study centres on the retailing industry, the theories of financial health specifically relevant to this sector will be applied. For instance, Price-Water-House-Coopers (2006) highlights several key metrics as measures of financial performance in the retail industry, including sales growth, profits, capital expenditures, store portfolio changes, expected return and customer satisfaction. Gereffi et al. (2001) and Enyi (2005) offer a critical perspective on metrics such as profit growth and sales growth,

arguing that they mainly reflect historical performance and, therefore, provide limited insights of value for investors in their decision-making processes. In response, Gereffi et al. (2001) suggest the adoption of ROCE as a more meaningful metric. In their view, ROCE addresses the critical question of whether the capital invested in the business is generating returns sufficient to offset the cost of the capital employed. ROCE is determined by comparing a company's profits to the capital employed in generating those profits, usually represented as a percentage or fraction. This is the basis of Barnes and Kaplinsky (2000) criticism of ROCE because it relies on profit, which has limitations when conducting global value chain analysis. This limitation arises because profit is only one element of production that rewards capital and it does not provide insight into the overall performance in a broader scale. However, Gereffi et al. (2001) support of ROCE, is strongly reinforced by Egungwu (2005), (Lisek et al., 2020, Enyi, 2005), who argue that ROCE functions as an indicator of management efficiency in terms of how a company allocates and utilises its resources within a particular financial period. Hence, this study has employed ROCE as a metric for assessing the financial health of listed food retail companies in the SADC region.

3.3 CONCEPT OF FINANCIAL POSITION

Financial position encompasses a company's leverage, solvency and cash reserves, ultimately determining its survival capacity. It constitutes the fundamental aspect of any business, irrespective of its size and comprises assets, liabilities and owner's equity. These three elements encapsulate the core of a company's financial position (Fatihudin, 2018). Regarding assets, companies must strike a delicate balance, maintaining the appropriate mix of current and non-current assets. Assets, in precise terms, denote the resources a company possesses as a result of past events, expected to yield economic benefits in the future. Essentially, resources are essential for any business, as survival would be unattainable without them (Wahyu, 2017). According to Sinha (2021), in the realm of liabilities, it is imperative that companies do not overextend themselves. In essence, liabilities represent current obligations stemming from past events, necessitating cash outflows to settle. Typical liabilities encompass loans, accounts payable and accrued expenses. Therefore, companies must strike a delicate balance, maintaining enough liabilities to facilitate wealth growth while avoiding excessive indebtedness, commonly referred to as being "over-leveraged,

which often leads to failure. Cho et al. (2019) explain that owner's equity denotes the residual interest in the company once all assets outweigh all liabilities. Owner's equity include shareholders' capital, reserves and retained earnings. It serves as a gauge of whether the company is generating value for its owners, as without this, a business would lack a compelling reason to exist.

3.4 FINANCIAL EVALUATION

The practice of company evaluation has seen widespread use since the late 1970s (Taticchi et al., 2012). Diverse research contributions to the field of company evaluation span various disciplines, including operations research, accounting, management, strategy, economics, psychology, human resources, design disciplines and other areas (Tweedie et al., 2019, Adler, 2011, Radnor and Barnes, 2007). It has evolved into an essential component for companies aiming to remain competitive in today's ever-changing business landscape. In general, company evaluation entails the assessment of both financial and non-financial measures of a company (Sorooshian et al., 2016). Pražák and Stavárek (2017) define company evaluation as a process that involves appraising a company's stability and its capacity for long-term sustainability. Another definition provided by Ramli et al. (2019) for company evaluation delineates it as a complex process closely tied to the realm of accounting, providing key data and information necessary for making well-informed decisions.

Wild (2017) shares that financial accounting data are encapsulated within financial statements, encompassing the statement of financial position, statement of profit or loss and other comprehensive income, cash flow statement and statement of changes in equity, in accordance with international financial reporting standards. These financial statements are mandated to be prepared in a fair and transparent manner, aiming to satisfy the requirements of financial management and, by extension, its decision-making processes. Nonetheless, it is important to note that their data have been criticised by Malik et al. (2021). Their contention lies in the argument that accounting information, in isolation, fails to provide a comprehensive preview of the future or deliver a well-rounded perspective of a company's financial terrain. According to Malik and colleagues, this conventional approach frequently comes up short in exploring the

strengths and weaknesses of the company, identifying emerging trends and assessing the overall calibre of its management.

To address financial statement limitations, Fridson and Alvarez (2022) state that the practice of financial evaluation must be undertaken. This process represents a formalised methodology to gauge the data acquired, enabling the formulation of conclusions regarding the overall management and financial wellbeing of the company. Subramanyam (2014) explains that financial evaluation encompasses the assessment of past performance, the present and the projection of future financial management. Its primary purpose is to diagnose the financial health of the company through the utilisation of specialised methodological tools, comprehensively analysing all sides of financial status. A company is considered financially sound if it demonstrates the capability to fulfil its financial objectives both in the present and the foreseeable future.

3.5 THE GENESIS OF FINANCIAL EVALUATION

The genesis of financial evaluation can be traced around 300 BC to Euclid's analysis of ratios in Book V of his *Elements*. However, its use as a method for analyzing financial statements is a fairly recent advancement. The practice of evaluating financial statements can be traced back to the later stages of America's shift toward manufacturing in the second half of the 19th century. As professional management of businesses took over from entrepreneurial capitalists, the demand for financial statements dominated. These changes served as the primary catalysts for financial statement evaluation (Horrigan, 1968). Nevertheless, Pražák and Stavárek (2017) indicate that there were discernible divergences in the paths taken at that time, with one path focusing on creditors and the other on managerial objectives. Credit analysis primarily aimed at evaluating a company's capacity to fulfil its financial obligations as they matured, while managerial analysis placed a stronger emphasis on profitability measures. While there was some interchange of ideas between these two schools of thought, credit analysis exerted more significant influence on the initial stages of ratio analysis development. Consequently, an examination of credit analysis offers valuable insights into the evolution of ratio analysis (Fatihudin, 2018).

Lee et al. (2023) brought forward that in the early 1870s, commercial banks operating in the financial sector started implementing single-name paper loans, leading to a growing demand for financial statements for lending purposes. However, this practice did not gain significant attention until the 1890s, when the volume and accessibility of financial information experienced a substantial increase. Initially, this influx of data were analysed item-by-item but it later evolved into a more systematic comparative and columnar analysis. Around the same time, Horrigan (1968) confirms that the separation of current and non-current items in financial statements became common practice and the relationships between different items began to receive attention. In the late 1890s, the practice of comparing a business's current assets to its current liabilities gained prominence. While numerous other financial ratios were developed during this period, the current ratio emerged as particularly meaningful for long-term decision-making.

Between 1900 and 1919, some notable developments in ratio analysis took place prior to and during World War I. This included three endogenous developments, which were, first, a large number of ratios, followed by absolute ratio criterion, which is 2 to 1 current ratio comparison and lastly, the intercompany analysis accompanied by the need for relative ratio criteria (Lintner, 1965). This is confirmed by Horrigan (1968), that during this period, there were two external developments that emerged. The first was the passage of the initial Federal income tax code in 1913 and the second was the establishment of the Federal Reserve System in 1914. These events shaped the demand for financial statements and prompted improvements in their content. In 1912, Alexander Wall recognised the rising need for various ratios and comparative ratio analysis. Wall's study involved collecting seven different ratios for 981 companies, although his results were not satisfying even when compared to 21st century accounting standards. The second substantial development occurred particularly in the retailing sector. This included the concepts of utilising profit margins and turnovers.

As for Horrigan (1968), a noteworthy period in the recognition of financial ratios occurred in the manufacturing sector in 1919 when du Pont introduced a ground breaking ratio ‘triangle’ system for evaluating operations. This system featured a top-tier return on investment (ROI) ratio (profits/total assets) and a base consisting of the profit margin ratio (profits/sales) and capital turnover ratio (sales/total assets). In the

1920s, Bliss offered the first coherent system of ratios which were tied in together in a logical *a priori* fashion. He continuously studied the relationships of ratios, which measured sales, cost and expense and financial relations to ratios, which measured earnings. Even though his work was immature, he set a ground work for the 21st century ratio analysis theory. It is perhaps fitting to assume that the beginning of ratios critic developed during this period. For example, in 1925, Gilman listed critics to ratios indicating that their changes over time cannot be relied on because variables are changing; they are mock; they do not give a full picture of the company performance; and their trustworthiness differs broadly among themselves. Even though the works of Bliss and Gilman were significant, they were not expanded upon and as a result it was largely lost (Horrigan, 1968).

The empirical foundation of ratio analysis saw significant progress beginning in the early 1940s. During this period, ratio analysis evolved to include the breakdown of ROI, specifically for managerial analysis purposes. This break down revealed two distinct ratios such as the ROI, which was translated into profit margin and capital turnover. Another important aspect of the 1940s period is the emphasis made on the role of ratios in small businesses. Additionally, Hickman discovered during this time that the times interest earned ratio and the net profit to sales ratio were effective indicators of default risk. As a result, the research study by Saulnier revealed that the RFC lending experience during 1934 to 1951 noted that companies with debts and poor current ratios were highly disposed to loan defaults. Beaver studied the capability of ratios to anticipate financial disaster of firms during 1954-64 and similar to Merwin, he discovered that other ratios can forecast catastrophes for a period of five years.

3.6 THE PRESENT STATE OF FINANCIAL EVALUATION

The most notable aspect of the current state of ratio analysis is the absence of a well-defined theoretical framework. Within the prevailing approach of ‘pragmatic empiricism’, users of ratios often rely heavily on the author's judgment, drawing from their experience. Consequently, the field of ratio analysis is replete with unverified claims regarding which ratios to employ and their ideal thresholds. Critiques of ratio analysis also extend to the fact that most research primarily focuses on the computation of ratios, neglecting other critical aspects. Despite these criticisms,

various studies have consistently affirmed the efficacy of financial ratio analysis in assessing a business's financial health and its ability to forecast future economic conditions (Horrigan, 1968). Notable research by Beaver, as well as investigations by scholars such as Kurnia and Sundarta (2023), (Feng and Wang, 2000, Maricica and Georgeta, 2012, Willy, 2017, Anggraini, 2022, Benrqya and Jabbouri, 2021), across diverse industries including grocery retail, demonstrate the value of this analytical tool. Therefore, financial ratio analysis proves to be a highly effective tool for evaluating the financial condition of any company.

3.7 APPROACHES FOR ASSESSING FINANCIAL HEALTH

According to Matoušek (2012), there are two main approaches to evaluating a company's financial health, which can be divided into fundamental technical analysis methods and advanced financial analysis techniques.

Fundamental technical analysis methods: These methods involve working with basic mathematics operations and pointers. The key benefit of this approach lies in its rapidity and ease of calculation. It encompasses:

- Total ratios study
- Money management and analysis
- Partly ration analysis
- Differential ratios analysis
- System of ratios analysis

Higher financial analysis methods: more sophisticated methods of financial analysis exist, incorporating complex mathematical techniques and in-depth consideration. These advanced methods include mathematical statistical approaches, such as statistical tests and regression simulations, as well as non-statistical approaches, including expert systems and fuzzy logic (Matoušek, 2012).

Financial statements

According to Hasanaj and Kuqi (2019), listed companies employ financial statements to communicate their financial information, following the guidelines outlined in the International Accounting Standard 1 (IAS) for the presentation of financial statements,

which adheres to the International Financial Reporting Standards (IFRSs). IFRS establishes the fundamental principles governing financial statements, including their structure, essential content requirements and overarching concepts such as the continuity of operations, accrual basis of accounting and the diversity between current and fixed assets. This standard mandate that a complete set of financial reports must include the following:

- Income statement
- Balance sheet
- Statement of changes in equity
- Statement of cash flows

SOCI plays a critical role in assessing a firm's financial performance. Its primary objective is to assess whether the company has successfully generated earnings, typically regarded as the bottom line. It accomplishes this by providing an overview of revenues generated, costs and expenses incurred, net profit and earnings for a particular accounting period, typically spanning a year or less (Fraser et al., 2016). The SOFP on the other hand provides a snapshot of the financial condition of the company, revealing whether it is a going concern or not. The SOFP is structured around three primary components: assets, liabilities and owner's equity. The interconnection between these three elements can be articulated through the fundamental accounting equation: Assets = Equity + Liabilities (Matoušek, 2012). The Statement of Changes in Equity serves as a concise summary of the transactions involving the equity accounts as found in the SOFP. The Statement of Cash Flows combines data from both the SOCI and the SOFP to provide insight into the changes in the cash account. It tracks changes in cash flow stemming from operational activities, investments and financing activities (Matoušek, 2012).

3.8 OTHER INFORMATION IN ANNUAL REPORTS

Company management bears the responsibility for preparing and presenting financial statements in a fair and accurate manner, aligning with the adopted accounting standards. This involves ensuring that the accounting basis used is appropriate for preparing the financial statements given the prevailing circumstances. Additionally, management is tasked with developing, implementing and maintaining internal controls

that are pertinent to the production of financial statements that are free from significant misstatements, whether they stem from errors or fraudulent activities (Cosma et al., 2022). To ensure that the information required for the fair presentation of financial statements is available, management must provide pertinent and adequate data (StAtEMENtS, 2021). Studies conducted by Ballwieser (2004) and Hasanaj and Kuqi (2019) affirm that financial statements predominantly comprise quantitative data with no explanation, a characteristic has drawn criticism for making financial statements seem deficient in terms of information content. Nonetheless, as conveyed by Vaz et al. (2016) and Eccles and Serafeim (2011), a relatively new framework known as integrated reporting has emerged with the objective of enhancing reporting practices. It achieves this by offering comprehensive explanatory information that encompasses various facets of a company's operations, including economic, social, environmental and governance dimensions. In contrast to the past, where companies predominantly emphasised the economic aspect, integrated reporting takes a more holistic approach.

Vaz et al. (2016) report that in the early 2000s, the Danish bio-industrial products company Novozymes emerged as the pioneer in issuing integrated reports. Afterward, Natura, a Brazilian company specializing in cosmetics and fragrances, released its first integrated report in 2003. Following this, Novo Nordisk, a Danish company focused on diabetes care, adopted integrated reporting in 2004. On August 2, 2010, The Prince’s Accounting for Sustainability Project (A4S) and the Global Reporting Initiative (GRI) announced the creation of the International Integrated Reporting Committee (IIRC). The IIRC's mission, as outlined on their website (www.theiirc.org), is "To create a globally accepted integrated reporting framework which brings together financial, environmental, social and governance information..." This initiative aims to facilitate businesses in making more sustainable decisions while providing investors and other stakeholders with a comprehensive understanding of a company’s true performance (StAtEMENtS, 2021).

Vitolla and Raimo (2018) integrated reports possess the potential to address the limitations of traditional financial reports, as they are concise, forward-looking and effective in conveying both internal and external factors that could impact the company's value creation. Likewise, Chouaibi et al. (2022) confirm that these advantages manifest in favourable economic outcomes for companies including boosts

in their reputation, increased market value and share liquidity and lowered capital costs. Nevertheless, integrated reports do have shortcomings. As pointed out by Carmo et al. (2023), despite the adoption of integrated reporting practices by several companies, there are still some that remain hesitant about embracing it due to the demanding nature of its requirements including high costs. It is important to note that the aim of this study is not to assess the effectiveness of integrated reporting. Instead, the study focuses on evaluating the financial health of listed food retail companies, an economic dimension within the realm of integrated reporting.

3.9 USERS OF FINANCIAL STATEMENTS

In the early literature, particularly in works like Edwards and Bell (1965), the primary emphasis was on business managers as the primary consumers of financial accounting. However, over time, the importance of decision usefulness for external users of financial statements gained prominence. This linkage between financial statements and their usefulness for external users was introduced by accounting standard setting bodies in the 1970s. Initially, this connection faced criticism from preparers and academics, including (Puxty and Laughlin, 1983). Ironically, one of the arguments against it was the perceived lack of understanding about the users and their specific needs. Nevertheless, the concept of decision usefulness gained acceptance and today, numerous textbooks and articles identify similar categories of users for financial statements. Sometimes, a distinction is drawn between direct and indirect users. For instance, Cole et al. (2009) provide a list of users that include the following categories:

Table 2.2: Direct users and indirect users of financial statements

Direct users	***Indirect users***
Company management	Residents
Investors	Environmental concerns and legal institutions
Customers	Analysts and rating agencies
Company employees	Media
Suppliers and lenders	Accounting standard setters
The government	Advisors
	Competitors

Source: Cole et al. (2009)

Table 2.2 outlines various direct and indirect user groups of financial reports. These include company management, who rely on financial reports to make crucial decisions, including the effective management of debt and the optimisation of cash flow. Such decision making necessitates a deep understanding of the company's financial position. Investors, including equity and debt funders, use financial reports to assess the safety of their investments and the returns on their capital. Company employees, especially those in accounting and finance roles, rely on financial reports as part of their job responsibilities. When other employees have access to this information, it enables them to evaluate the firm's overall health and make informed decisions about their involvement with the company. Furthermore, major prospective customers review a firm's financial information to gauge its stability as a potential long-term supplier or assess its financial capacity for significant projects (Cole et al., 2009).

Suppliers and lenders refer to financial reports to determine whether they can extend credit and loans to companies, often with interest rate and repayment covenants. Lenders fund major projects, while creditors facilitate credit-based transactions, particularly during periods of limited working capital. Government entities exert influence through policies related to employment, regions, taxation and legislation, often supporting vocational training and employment programmes. The general public uses financial statements to inform decisions regarding investment, business relationships and community support. Environmental organisations establish regulations encompassing areas like emissions reduction and waste management. Legal institutions, such as tax authorities and labour courts, set laws for companies to follow. Analysts and credit rating agencies scrutinise financial statements for credit ratings. Media disseminates financial statements of listed companies, making them users as well. Accounting standard setters like the IASB and FASB contribute to the regulatory framework, while advisors, including investment bankers and lawyers, offer expertise in this context. Competitors, in their efforts to benchmark, assess other company’s financial reports. The insights gathered from the reports that could lead to adjustments in their competitive strategies (Cole et al., 2009).

3.10 HORIZONTAL ANALYSIS

Horizontal analysis, alternatively known as trend or comparative analysis, involves the comparison of financial statements over multiple years to facilitate decision making within a company. Typically, the current year's figures are compared with those of a selected base year (with the base year considered as 100 percent), enabling an assessment of how financial data varies from one year to the next (Lakada et al., 2017). According to Hanakova and CSC (2009) horizontal analysis is a technique used to assess a series of financial statement data across multiple periods. Its primary purpose is to ascertain the changes, whether increases or decreases, that have occurred, often utilising financial statements like the SOCI, SOFP and SOCF.

Furthermore, Hanakova and CSC (2009) indicate that the yearly variations can be computed using the following methods:

- **The formula of total changes:**

$$\mathbf{D_t/t\text{-}1 = B_i\ (t) - B_i\ (t\text{-}1),}^{9}$$

where: $D_t/t\text{-}1$ = the variation contrary to the last period (year);

t – time;

B_i – the cost of an item in the financial records.

- **The formula of relative changes (in %)**:

$$\mathbf{I_t/t\text{-}1 = B_i\ (t) / B_i\ (t\text{-}1) \times 100,}^{10}$$

where: $I_t/t\text{-}1$ – index;

T – time;

B_i - the cost of an item in the financial records.

For the analysis to produce effective results, it necessitates having sufficient data, ensuring comparability over a time period and ensuring that the data used are distinguishable from any other datasets (Lakada et al., 2017).

3.11 VERTICAL ANALYSIS

Vertical analysis involves evaluating the proportional relationships between different items within a financial statement for a given period. Also referred to as structural or

static analysis, this method focuses on highlighting the connections among various elements in the financial statement. As described by Lakada et al. (2017), vertical analysis expresses each item in the financial statement as a percentage of a base amount.

- **Method of proportion analysis:**

$$I_i = B_i / \Sigma B_i \times 100,^{11}$$

where: I_i– index;

Bi - the cost of an item in the financial records;

Σ Bi – total of all costs of all substances.

Cash flow analysis - According to Jořenková (2011), the statement of cash flows summarises a company´s cash movements from the beginning to the end of the reporting period. Daugėlaitė and Kušleikienė (2022) mention two methods of the cash flow analysis. These are:

Income statement method – This method includes components like cash disbursements to employees and suppliers, cash collections from customers, interest and dividends received, and other cash inflows. Nevertheless, it does not provide a breakdown of incomes and expenses (Daugėlaitė and Kušleikienė, 2022).

Indirect method/reconciliation method -The indirect method is more commonly utilised than the direct method. This method calculates cash flow from operating activities by adjusting net profit to determine net cash flow (Daugėlaitė and Kušleikienė, 2022).

The statement of cash flows categorises cash flow into three main sections: financing cash flow, investing cash flow and operating cash flow.

Financing activities - cash flows from financing activities reflects the cash generated through external funding mechanisms, including actions such as issuing cash dividends, issuing and selling additional shares, or making alterations to debts (Itan and Riana, 2021).

Investing activities - Cash flows from investing activities offer an understanding of the cash gained or spent from the sale or purchase of fixed assets, investments in financial markets, or stakes in operating companies (Itan and Riana, 2021).

Operating activities - Cash flows from operating activities reflect the cash produced by the company's ongoing business operations, measuring the current cash generated by its primary business activities (Itan and Riana, 2021).

3.12 TYPES OF FINANCIAL RATIOS

Users of financial statements utilize ratios to identify trends and compare them with other companies. These financial ratios serve various purposes, including assessing a company's debt repayment capacity, evaluating business and management performance, and monitoring statutory compliance regarding the company's performance (Barnes, 1987). According to Ligocká and Stavárek (2019), financial ratios offer a simple approach to interpreting the numbers within financial statements, as they monitor specific items over time or in relation to other financial statement elements. Financial ratios, in certain instances, may even serve as indicators of potential future bankruptcy for a company.

According to Jořenková (2011), financial ratios can be categorised based on the statistics they offer, namely:

- Investors return
- Profitability
- Liquidity
- Solvency
- Activity/efficiency

3.12.1 Liquidity

Liquidity ratios gauge a company's capacity to meet its short-term liabilities when they come due. They assess liquidity by comparing the company's most readily convertible assets with its short-term debts. Below are three key liquidity indicators (Jořenková, 2011).

Current ratio – This ratio is widely used to assess a company's ability to cover its short-term liabilities within the next accounting period, usually one year. A higher ratio is more advantageous, indicating that the company is better positioned to fulfil these obligations in cash, including pay-outs to investors. The retail industry typically maintains an average current ratio of approximately 1.5; however, a higher ratio is generally preferable (Denver-CPA-Firm-and-Business-Advisor, 2020). Current ratio is calculated as:

Current Assets / Current Debts

Quick ratio – known also as the acid-test ratio, this metric offers a stricter evaluation of a company's ability to settle its current debts compared to the current ratio, by excluding year-end inventories from its calculation (Jořenková, 2011). It is computed as follows:

(Current Assets – Closing Inventories) / Current Debts

Working capital ratio – this ratio evaluates a company's liquidity and operational efficiency by comparing current assets to current liabilities. A working capital ratio exceeding one indicates that a company may have the capability to meet its short-term debts (Jořenková, 2011). It is calculated as follows:

(Current Assets – Current Debts) / Total Assets

3.12.2 Solvency

The solvency ratio evaluates a company's capacity to cover its long-term debt with its cash flow, helping to gauge the risk of bankruptcy. It indicates whether the company leans more towards debt or equity for financing. A high solvency ratio is a favorable sign of financial stability. Typically, a ratio below 20% may indicate a greater risk of default (Dance and Imade, 2019). Those indicators are:

Capital gearing – this ratio contrasts a company's long-term debts with its total capital structure. The acceptable threshold for these ratios varies depending on the industry type (Dance and Imade, 2019). It is calculated as follows:

Long-term Debts / Shareholders´ Equity; or
Long-term Debt / Shareholders´ Equity + Long-term Debt

Debt ratio – this ratio measures the extent of borrowing utilised by a company by comparing its total debts (borrowings) to its total assets. A lower ratio signifies a reduced reliance on borrowing and a stronger equity position (Dance and Imade, 2019). It is calculated as follows:

Total Debts /Total Assets

Owner´s Equity Ratio – this ratio indicates the level of leverage in owner's equity and provides insights into the financial structure of the company. When combined with the debt ratio, it forms a combined value of one (Dance and Imade, 2019). It is calculated as follows:

Shareholders' Equity/Total Assets

3.12.3 Efficiency

The efficiency ratio is a metric that enables company managers to assess how effectively they have utilised the company resources including debts. The outcomes of these ratios assist the company in making decisions regarding inventory turnover, suitable credit terms and the efficiency of its assets (Hawaldar et al., 2022). These indicators include:

Inventory Turnover – this ratio measures the company's inventory turnover rate per year and can be calculated using the following formulas:

Cost of Goods Sold / Inventory; or
Sales / Inventory

No of days inventory on hand – this ratio helps determine how many days inventory remains in stock before being sold. It can be calculated as follows:

Inventory / Sales x 360 days

Working capital turnover – the ratio is utilised to quantify the level of working capital required to generate sales (Hawaldar et al., 2022). It is calculated as:

Sales / (Current Assets – Current Debts)

Assets Turnover – this fraction helps quantify the sum of sales generated per unit of assets. A company that achieves the same sales volume with a lower asset base is generally convinsing than one demanding a more asset base under similar conditions (Colline, 2022). It is calculated as:

Sales / Total Assets

Fixed Assets Turnover – this ratio is used to quantify the sales generated from each item of fixed assets (Colline, 2022). It is calculated as follows:

Sales / Non-current Assets

Debtors Collection Period – this calculation is employed to determine how many days it takes the company to collect payments from those with whom it has conducted transactions on account or customers (Colline, 2022). It is calculated as:

Debtors / Sales x 360 days

Creditors Payment Period - this calculation is used to ascertain the number of days required for the company to settle payments with its creditors for transactions conducted on credit (Hawaldar et al., 2022). It is calculated as:

Payables/ Sales x 360

3.12.4 Profitability

Profitability ratios provide a thorough assessment of a company's overall profitability by comparing it to the capital invested by shareholders and lenders, as well as the expenses and costs incurred over a given period (Wijaya and Muljo, 2022). Higher or comparable ratios relative to competitors or past performance typically suggest

favorable company performance (Sari et al., 2022a), assuming the changes in financial metrics are attributed to actual improvements in operations rather than just inflation (Pratama et al., 2022). Those indicators are:

Return on Sales (ROS) – this ratio is employed to measure the net profit as a percentage of net sales (Wijaya and Muljo, 2022). The formula is:

Net profit after interest and taxes (EAT) / Net Sales x 100%

Return on Total Assets (ROA) – this ratio assesses the efficiency of profit generation relative to the total assets utilised (Sari et al., 2022a). The formula is:

Net profit after interest and taxes (EAT) / Total Assets x 100%

Return on Equity (ROE) – this ratio assesses how effectively net profit is generated from the shareholders' equity (Pratama et al., 2022). The formula is:

Net Profit after interest and taxes (EAT) / Shareholders´ Equity x 100%

Return on Investment (ROI) – this ratio is used to measure the ROI, which encompasses shareholders' equity and long-term debts or one of the two depending on the financial structure employed. It is a crucial ratio for investors' decision-making, furnishing essential insights into the efficiency of investments (Wijaya and Muljo, 2022). The formula is:

Profit before interest and tax (PBIT) / Debts and Shareholders' Equity x 100%

Gross Profit Margin – this ratio is used to indicate the remaining funds available for covering operating expenses, interest expenses, taxes and achieving a profit (Wijaya and Muljo, 2022). The formula is:

(Total Sales – Cost of Sales) / Sales x 100%

Net Profit Margin (NPM) – this ratio provides insight into the amount of money remaining after all costs and expenses have been settled. It is a key indicator of financial health and profitability (Sari et al., 2022a). The formula is:

Profit After Tax (PAT) / Sales x 100%

Return on capital employed (ROCE) – This ratio assists in understanding the effectiveness with which a company generates profits from the capital deployed. The formula is:

Net profit after tax / Shareholders' equity + Long term liabilities x 100%

In the context of the retail industry, Gereffi et al. (2001) maintain that ROCE stands out as the most appropriate financial performance measure. Consequently, this study adopts ROCE as the chosen financial performance metric for evaluating the listed food retail companies in the SADC region.

3.12.5 Measures for shareholders

Book Value per Share – these ratios assess the per-share value in relation to the book value, which represents the company's equity (Al-Awawdeh, 2018). The formula is:

Shareholders’ Equity / Number of ordinary shares in issue

3.12.5.1 Investor ratios

Investors are interested in assessing the performance of their investments. There are several key ratios that are especially important to both debt and equity investors. (Ogilvie, 2009). These ratios include the following:

3.12.5.2 Earnings per share (EPS)

EPS is a critical factor in determining share price and company value, with many individual investors relying on it for investment decisions. It gauges a company's profitability per shareholder ownership unit and significantly influences share prices.

EPS serves as the denominator in the widely used P/E ratio. Two calculation methods exist: basic and fully diluted EPS, with the latter, considering dilutive effects, being more accurate and commonly cited. EPS can also be categorised by time period: trailing earnings, current earnings, or forward earnings. However, it is essential to note that earnings can be influenced by manipulation and accounting changes, making free cash flow a more dependable indicator than EPS for some (Khan et al., 2014). The EPS formula is as follows:

EPS = Earnings/Number of ordinary shares in issue

3.12.5.3 Price Earrings (P/E) ratio

The P/E ratio is a fundamental analysis tool used to evaluate a company's future growth potential (Ikhsan and Fahruri, 2021). It helps determine the rate of return on invested capital for a share. A low P/E ratio suggests that the share price has decreased, which may indicate potential for future price increases (Alfarago and Bakhtiyar, 2023). Conversely, according to Suharno and Afriani (2020), a high P/E ratio signifies that share prices are expensive and may be challenging to increase in the future. Authors utilise the following formula to calculate the P/E ratio:

P/E ratio = Current share price/EPS

3.12.5.4 Earnings yield

Earnings yield represents the ratio of earnings, specifically net profit after preference dividends, to the current or market share price. An increasing earnings yield implies that net profit is growing at a faster pace than the share price, often due to factors not solely influenced by market variables. These factors may encompass intrinsic indicators of operational efficiency, such as the ability to generate income from the company's investment in assets. ROA is one of the key metrics used to assess this operational efficiency (Abraham et al., 2017). The formula to calculate earnings yield is as follows:

Earnings yield = EPS/Current share price

3.12.5.5 Dividend payout rate

The dividend payout ratio measures the dividends paid to ordinary shareholders relative to the company's earnings. This ratio tends to fluctuate across different industries. For example, well established companies with consistent cash flows may exhibit higher dividend payout ratios. These companies do not require substantial cash retention for new investments. In the case of financially robust companies in such industries, a favourable dividend payout ratio may even reach 75% or more of their earnings (Jořenková, 2011). The formula for dividend payout rate is as follows:

Payout Rate = Dividend per share/EPS

3.12.5.6 Dividend Yield

The dividend yield is a financial metric that indicates the annual dividend paid by a company as a percentage of its current share price (Kim, 2021). However, there is ongoing debate in finance about the relationship between dividend yields and share returns. While the "Gordon growth model" by Gordon and Shapiro (1956) and dividend-ratio models like Campbell and Shiller (1988) suggest that dividend yield can predict share returns, empirical studies have produced varying results. At a collective level, some researchers like Fama and French (1988), (Kothari and Shanken, 1997), Ferreira and Santa-Clara (2011) and Golez (2014) suggest a strong positive relationship between dividend yields and expected market returns.

On the other hand, researchers like Goetzmann and Jorion (1993), Lanne (2002) and Welch and Goyal (2008) have found little evidence that dividend yields can forecast stock market returns. Goyal and Welch (2003) suggest that while dividend yields could predict future equity premiums before 1990, this predictive capability has since diminished. Similarly, Ang and Bekaert (2007) found that dividend yields only predict excess returns in the short term and do not have long-term predictive strength. The formula for dividend yield is as follows:

Dividend yield = Dividend per share / Current share price

3.12.5.7 Dividend Cover

Dividend cover, also known as dividend coverage, is a ratio that compares a company's earnings (net income) to the dividends it pays to its shareholders. It is

calculated by dividing the net profit or loss available to ordinary shareholders by the total amount of ordinary dividends distributed (Ogilvie, 2009). The formula for dividend cover is as follows:

Dividend cover = EPS/Dividend per share; or
= Total Earnings / Total Dividend

3.13 CRITICISM OF FINANCIAL RATIOS

As per Paton (1928), it is essential to bear in mind that financial ratios, in isolation, often possess limited significance. Mere scrutiny of ratios, no matter how meticulously calculated and presented, cannot serve as the sole basis for sound managerial conclusions and policies. Instead, ratios should be regarded as hints or starting points, guiding further study and investigation. Furthermore, the effective use of this analytical tool in practical scenarios necessitates the development of robust measurement standards (Csikosova et al., 2019). Creating and maintaining adequate standards can be a complex undertaking, as they are not easily established and require continual revision. Past performance within a specific business can provide a foundational basis for establishing norms and should be carefully examined. However, of potentially greater significance are the records of other company operating in a similar line of business and under somewhat comparable conditions, even though acquiring and interpreting these data can be challenging. Ideally, the formulation of appropriate standards should incorporate aspirational targets, striving for standards that are more than just norms; they should represent aspirational targets. Moreover, the consideration of ranges and trends is vital and whenever feasible, standards should encompass these dynamic elements.

Healy and Wahlen (1999) further underscore that while financial ratios have evolved significantly, a considerable debate persists regarding the acceptable threshold levels of ratios, which are contingent on the specific industry sector. What might constitute an acceptable current ratio in the food retailing industry, for instance, might not hold true in the mining sector and vice versa. According to Faello (2015), one of the additional limitations associated with financial ratios arises from their fundamental structure, which comprises a numerator and a denominator. If either the numerator or

denominator is inaccurately reported, it can lead to errors in the financial ratios (Barnes and Kaplinsky, 2000). Furthermore, since financial statements are constructed based on the accounting methods chosen by the company, there exists the potential for manipulation that could result in incorrect financial ratios.

3.14 OVERCOMING LIMITATIONS OF FINANCIAL RATIOS

It is worth noting that this study employed audited financial statements of listed food retail companies, a measure taken to reduce the likelihood of potential errors or misstatements.

3.15 FINANCIAL HEALTH THEORIES

Financial health theories are comprehensive evaluations of a company's financial well-being. They measure whether directors or managers are making prudent decisions regarding spending, saving, borrowing and strategic planning to ensure a company's resilience and the pursuit of opportunities. These theories are assessed using a framework built upon financial statements, relying on financial ratios derived from these statements. Companies that exhibit financial health possess the capability to handle their daily expenditures, withstand financial challenges and make progress towards achieving their long-term financial objectives (Pelekh et al., 2020). The next section will delve into several theories related to financial health. The prevailing theories employed for assessing financial health encompass well-known metrics such as ROE, ROA and ROCE. In the context of the retail industry, Gereffi et al. (2001) maintain that ROCE stands out as the most appropriate financial performance measure. Citing Zebra-bi (2023), ROCE is most appropriately utilised as a measure of financial health for companies that bear a significant debt burden. Consequently, this study adopts ROCE as the chosen financial performance metric for evaluating the listed food retail companies in the SADC region.

3.16 CHAPTER SUMMARY

The literature encompasses a wide array of theories that have profoundly shaped the understanding of company financial health. This chapter explored these theoretical perspectives, highlighting their relevance and applicability to the current study's

framework. Establishing a solid theoretical foundation has been paramount in elucidating the factors that affect financial health, providing essential insights for the empirical data analysis in subsequent chapters. Therefore, this chapter has set the stage for the empirical analysis that follows, providing a robust theoretical and contextual foundation. By synthesising the existing literature and theories, it has paved the way for a deeper understanding of the determinants of financial health, ultimately contributing to the construction of a comprehensive framework that will guide the evaluation of financial health in the context of the SADC region.

The next chapter will critically examine relevant theories for the study.

CHAPTER FOUR

THEORETICAL FRAMEWORK FOR THE STUDY

4.0 INTRODUCTION

The previous chapter presented a compilation of the literature that supports the proposition that economic status is a substance for enhanced company financial health. However, the current chapter critically examines the relevant theories. The first section discusses relevant theories, followed by the presentation of other theories. Afterwards, the theoretical framework for each specific objective of the study is outlined. The concluding section provides a summary of the chapter.

4.1 FINANCIAL ANALYSIS THEORIES

Financial analysis involves evaluating a company's economic well-being and its capacity to generate returns on the capital invested (Hong and Rappaport, 1986). The financial analysis offers responses between the expected effect of financial decisions and reality (Osadchy et al., 2018a). Pirveli (2014) states that financial analysis necessitates an examination of well-prepared financial data, including the income statement, balance sheet, cash flow statement, equity accounts and company leadership style. Financial statements provide data regarding company profitability, liquidity, solvency and shareholder returns, which are synthesised to generate meaningful information. This information assists stakeholders in making informed decisions regarding investing in the company and understanding its current and future financial outlook (Osadchy et al., 2018b).

Financial analysis is crucial as it extends beyond the confines of financial statements, offering insights into a company's future potential and governance that numerical data alone cannot provide (Manry et al., 2023). Competent financial analysts follow ethical practices and use rigorous techniques to reduce the risk of internal financial manipulation and maintain the accuracy of their assessments (Tamplin, 2023). Fundamental aspects of effective financial analysis include ratio analysis, valuation, and risk assessment. Ratio analysis comprises calculating and analysing financial ratios to gain insights into a company's financial position and performance. Valuation includes determining the value of a company's shares or assets based on various

factors such as cash flows, earnings and market trends (Kieso et al., 2019). The risk assessment is concerned with analysing a company's financial risks such as credit risk, market risk and operational risk and assessing the potential impact of these risks on the company's financial health. Alshowishin (2021) and De Franco et al. (2011) further summarise the benefits of using financial analysis as follows:

- A healthy company fulfils both short-term and long-term obligations
- Effective asset utilisation leads to increased profits
- Excessive current assets may indicate inefficient resource usage
- High liquidity from current assets may imply less productive asset allocation
- Introducing leverage implies increased financial risk
- Decreasing capital resources suggest declining company efficiency
- Efficient resource management mitigates losses

Research studies have also been conducted to examine the relevance of financial analysis in organisations. According to their research, Pirveli (2014) and Kieso et al. (2019) conclude that financial analysis enhances shareholders' financial decision-making. In another survey conducted by the Association for Financial Professionals, 80% of respondents indicated that financial analysis is a critical skill for finance professionals (AFP, 2021). The Journal of Financial Economics published a study that found "financial statement analysis is an important tool for predicting future financial distress" (Vesic, 2018). Moreover, Havard-business-review (2019) notes that "the ability to conduct financial analysis is still critical to success in the business world. This theory suggests that altering one financial aspect will lead to a specific change in another variable and the assessment of this change is contingent on the anticipated impact it will generate (Pirveli, 2014). For this reason, this study aims to assess the financial health of listed food retail companies in the SADC region.

4.2 AGENCY THEORY

Agency theory explores important aspects of corporate governance relevant to both financial and non-financial organizations. It highlights the agency problem, which occurs when there's a misalignment between the goals of shareholders and those of managers. This problem surfaces when managers, who are expected to act in the best interests of shareholders, might not align with the shareholders' objectives. This issue,

known as the principal-agent problem, involves shareholders (principals) and managers (agents). Managers are tasked with effectively managing the company's operations to boost financial performance and maximize shareholder returns. The agency problem becomes evident when managers' interests diverge from those of shareholders, potentially leading them to avoid investing in profitable projects that shareholders would support (Rozeff, 1982).

Efforts to align conflicts between the principal and agent incur agency costs, which encompass monitoring and bonding costs, along with residual losses. Jensen and Ruback (1983) articulate that the root of the agency problem lies in the managers' superior information regarding valuable investments that could yield enhanced positive performance, given their involvement in the day-to-day operations of the company. Nevertheless, Ballwieser et al. (2012) demonstrate that when the activities of managers lack proper monitoring (leading to agency monitoring costs), there is a tendency for them to prioritise personal interests over company objectives. This deviation is manifested through activities that increase their executive benefits, thereby undermining the pursuit of the company's goals.

According to the agency theory hypothesis, a scenario of high leverage or a low equity/asset ratio serves to diminish the agency costs associated with external equity and, in turn, enhances company performance. This occurs by either constraining managers to act more in the interests of shareholders or encouraging them to do so (Berger and Di Patti, 2006). Furthermore, while increased leverage may decrease the agency costs related to external equity, the opposite effect may transpire concerning the agency costs linked to outside debt, arising from conflicts between debt holders and shareholders. As leverage reaches relatively high levels, further increments might lead to substantial agency costs associated with outside debt. These costs can manifest from risk-shifting behaviours or a diminished effort to control risk, resulting in higher expected costs of financial distress. These agency costs, in turn, lead to elevated interest expenses for companies, compensating debt holders for their anticipated losses (Berger and Di Patti, 2006).

Jensen and Meckling (1979) argue that the effect of leverage on overall agency costs is not linear. They suggest that at low levels of leverage, leverage can create positive

incentives for managers, which in turn lowers total agency costs by decreasing the agency costs associated with external equity. However, at a certain point where the likelihood of financial distress becomes more pronounced, the agency costs of outside debt surpass those of external equity. Consequently, further increases in leverage result in higher total agency costs. The concept of the agency theory indicates that corporate managers attempt to avoid financing strategies, like external debt financing, that would subject their company investments to external scrutiny. Instead, they chose financing strategies, such as equity financing, which safeguard them from external monitoring (Frank and Goyal, 2008). For this reason, this study aims to assess the financial health of listed food retail companies in the SADC region by applying the agency theory.

The advantages of agency theory include that it aligns owners' and managers' interests and addresses conflicts through governance mechanisms and it reduces issues like moral hazard. However, the disadvantage is that it can be expensive and may overlook intrinsic motivations and broader goals. However, this theory is utilised in the current study to address the relationship between governance and financial health of the listed food retail companies in SADC.

4.3 VALUE-CHAIN THEORY

The value-chain theory was developed by Michael Porter 30 years ago. The value-chain theory considers company activities from the creation of a product or service to its ultimate delivery to the market, including all processes in between (Morris et al., 2021). Since its inception, the utility of value-chain theory has expanded into diverse applications beyond the analysis of individual companies. Value-chain analysis has found application in the scrutiny and assessment of entire industries, as well as specific systems within companies. Furthermore, it has been instrumental in examining activities that span multiple countries, constituting what is commonly referred to as a global value chain (GVC), also known as international supply chains (Sturgeon et al., 2012). GVC is characterised by economic upgrading, defined as a transition to higher-value-added products, services and production stages achieved through increasing specialisation and efficient domestic and international linkages (Lee et al., 2018).

The value chains theory recognises that a company's performance is enhanced through various activities streamlined to achieve corporate goals. These activities are heterogeneous and viewed per industry. For instance, according to Katou (2017), the effective utilisation of human resources in the value chains has the potential to enhance overall company performance. Flint (2004) states that the efficiency and effectiveness of strategic marketing play a crucial role in enhancing the value proposition, customer engagement and brand perception. Lund-Thomsen and Lindgreen (2014) includes corporate social responsibility (CSR) in the context of value chains, asserting that incorporating ethical, social and environmental considerations into corporate practices yields the best corporate results. Competitiveness is a vital element in the value chain, referring to the business's ability to outperform its opponents and gain a justifiable advantage in the market (Bayoumi et al., 2018). According to the value chain theory, company size means larger companies often benefit from economies of scale. As the company size increases, it can negotiate better deals with business partners, achieve efficient procurement and distribution, leading to reduced costs and improved financial position (Urata and Baek, 2020). Ndubuisi and Owusu (2023) the theory of value chains submits that as a company undergoes ageing process, automatically it matures in its operations, leading to more efficient and effective processes and improved performance. For this reason, this study aims to assess the financial health of listed food retail companies in the SADC region by applying the value chains theory.

4.3.1 Global value chain

Global value chain covers the interconnected relationships within and between companies and various entities, forming the foundation for the geographical and organisational restructuring of global production. The essence of the GVC concept lies in recognising that the division and subsequent reintegration of production through cross-company trade are not haphazard, automatic, or uniformly systematic processes. Rather, these intricate dynamics are set in motion and institutionalised through deliberate strategic decisions made by specific companies, often prominent corporations. These companies wield influence over access to end markets in both developed countries and, increasingly, emerging economies (Gibbon et al., 2008).

According to Zamora (2016), over the past few decades, notable transformations have occurred in the global economy, particularly in the spaces of international trade and

industrial organisation. Two paramount aspects of the modern economy include the globalisation of production and trade. Analysing global value chain entails the essential task of ‘mapping the market’ to systematically monitor and assess the roles of diverse chain actors and the interconnections among them. Global value chains are influenced by factors beyond the control of their members. Studying these factors becomes crucial to understand the prevailing trends impacting the chain and the forces driving these trends.

This insight enables the identification of opportunities for lobbying and policy innovation (Hellin and Meijer, 2006). Moreover, within the value chain, various service providers offer essential business support. These services can encompass market information, financial services, transportation, research and development, and accreditation services (Zamora, 2016).

4.3.2 Industry value chain

Analyzing the value chain at the industry level provides insights into how various players interact within a particular sector. It helps determine the resources needed for competitive success and how each participant can enhance both their own returns and those of the entire value chain (Walters and Rainbird, 2007a). While all companies contribute to a value-creating network, the influence they have can vary. Some firms play a significant role in shaping the network, while others have a more limited influence and are more affected by the network's dynamics (Kothandaraman and Wilson, 2001).

4.3.3 Company value-chain

Company value chain studies can be further categorised into two types: those using information about a company’s GVC participation and those utilising a company’s data on imports and exports. The former typically involves information gathered from surveys querying a company's GVC involvement. Conversely, the latter approach assumes a company's participation in GVCs based on its engagement in importing inputs and exporting outputs (Urata and Baek, 2020). In practice, there are no rigid rules governing the analysis of value chain. It may encompass both qualitative and quantitative approaches, although Hellin and Meijer (2006) advocate for initiating the analysis with a qualitative approach followed by a subsequent quantitative

investigation. As asserted by Horvathova and Mokrisova (2020), a company's value chain activities serve as a source of sustained competitive advantage when they exhibit characteristics of being valuable, rare, inimitable and non-substitutable. These activities includes the utilisation of both tangible and intangible assets, human resources, company age, culture and management, along with marketing strategies. Gereffi et al. (2001) further emphasise that value chain offers a framework for ongoing transformation, expansion and adaptation to ensure competitiveness. Additional crucial dimensions of value chains, as highlighted by Morris et al. (2021), encompass customer centricity, innovation, operational efficiency, collaboration, continuous improvement and sustainability.

Advantages of value-chain theory include identifying and optimizing activities that create value, enabling businesses to gain a competitive edge and provides a structured framework for improving efficiency across the organization. The disadvantage of it is that it relys on accurate data and resource availability, which can be challenging for other companies. However, this theory is relevant to the current study to help identify value-adding activities that impact profitability within the region's dynamic market environment.

4.4 OPEN SYSTEMS THEORY

The open systems theory, developed by Bertalanffy (1968), posits that companies operate within an open environment where their actions are subject to influence by macroeconomic forces. These forces, including interest rates, exchange rates, consumer price index (inflation) and gross domestic product (GDP), are beyond the company's control. Therefore, companies are compelled to adapt to their external variables and navigate the risks associated with them (Owolabi, 2017, Laszlo and Krippner, 1998). Accordingly, companies must remain aware of their surroundings and comprehend how they shape their business operations (Bertalanffy (1968). The theory highlights the importance of companies' adaptability and risk management strategies in response to the ever-changing macroeconomic landscape. Mwenda et al. (2023) argue that when such variables shift, companies are limited to responding with solutions that are within the scope of their existing resources. But, in some cases, companies can gain a competitive edge if their business model is well aligned with

external forces. For this reason, this study aims to assess the financial health of listed food retail companies in the SADC region by applying the open systems theory.

The advantages of Open Systems Theory include that it emphasize the interdependence between a firm and its external forces, enabling adaptability to changes and external influences and foster collaboration across various subsystems within the firm for improved efficiency. However, this theory is complex to understand, as managing external dependencies can be challenging. However, this theory is useful in the current study as it highlights the impact of macroeconomic factors, such as interest rates, currency rates, GDP, and CPI on companies financial health.

4.5 MODIGLIANI AND MILLER THEORY

Modigliani and Miller (1958) introduced a paradigm shift to the field with the Modigliani and Miller theory, challenging the long-standing dichotomy that had characterised the discipline. One school argued that dividend payouts hindered a company's ability to invest in profitable ventures, thereby obstructing value maximisation, while the other contended that distributing dividends maximised a company's value for its shareholders. Modigliani and Miller introduced the ground-breaking concept that a company's value is independent of its capital structure. This innovative proposal, as recognised by Chew (1993), positioned Modigliani and Miller as the pioneers of modern finance. Modigliani and Miller's initial framework, while omitting considerations of taxes, has faced criticism for its limited applicability to real-world situations. Nevertheless, their model does advocate for a comprehensive exploration of the various factors that can impact the identification of an ideal corporate capital structure, as highlighted by (De Matos, 2001). However, it is worth noting that the intention of this study is not to examine how capital structure influences financial performance.

4.6 MODERN PORTFOLIO THEORY (MPT)

MPT is a comprehensive framework that incorporates two crucial elements: Markowitz's portfolio selection theory, which originated in 1952 and William Sharpe's seminal contributions to the theory of financial asset pricing, introduced in 1964 under the name CAPM (Mansuri and Shah, 2022). MPT serves as an investment framework intended for the purpose of carefully constructing investment portfolios. The primary

objectives within this framework are to maximise the expected returns of the portfolio while simultaneously minimising investment risk (Cui and Cheng, 2022). At the core of this theory is the recognition that risk is an inherent component of financial health within any company. The theory posits that a well-constructed portfolio has the potential to maximise performance for a given level of risk or minimise risk for a specified amount of returns achieved through the combination of various resources. According to this theory, the impact of unsystematic risk stemming from external contingencies in each market is mitigated through the strategic allocation of resources across diverse markets. Consequently, diversification serves to diminish a company's exposure to risk while simultaneously enabling it to leverage higher debt capacities. This enhanced leveraging capacity provides the company with the flexibility for expansion and growth (Markowitz, 1952).

4.7 RESOURCE-BASED VIEW (RBV)

The RBV theory is a strategic management context that clarifies how the firm possessions and abilities can be utilised as a source of continual competitive gain. The genesis of the RBV theory can be drawn to the early work of Edith Penrose, who issued her manuscript "The Theory of the Growth of the Firm" in 1959 (Grant, 1991). The theory was not known until the late 1980s and early 1990s when it gained significant attention in the academic literature, thanks to the works of Jay Barney, Birger Wernerfelt and others. Barney's 1991 article, "Firm Resources and Sustained Competitive Advantage," is widely regarded as a seminal contribution to the RBV theory (Amit and Schoemaker, 1993). Panda and Reddy (2016) the RBV theory suggests that a company's resources and capabilities can be a source of sustained competitive advantage if they are valuable, rare, inimitable and non-substitutable (VRIN). According to the RBV theory, a firm's possessions can be characterised in four different ways: tangible assets, human capita, firm's specific properties. The significance of the RBV theory to evaluate the financial health of a company is established in various other studies including Armstrong and Shimizu (2007) who confirmed a positive association between the RBV theory and firm's financial health. Other studies led by Sharma et al. (2019) using data from 42 banks in Kuwait and another by Kraaijenbrink et al. (2010), offered a critical review and found that the RBV theory is useful for considerate links between firm's resources and financial health.

However, the RBV theory overlooks the importance of external factors such as market dynamics, customer needs and competition, but focuses only on internal resources and capabilities (Porter, 1991).

4.8 MARKET RISK THEORY

The market risk theory, also recognised in the field as the examination of how financial markets and the prices of assets within those markets can evolve over time, explores how such changes can impact the value of investments (Nenu et al., 2018). Market risk recognises fluctuations in market prices or market conditions, such as changes in interest rates, inflation, currency exchange rates and commodity prices. The theory was developed by Harry Markowitz in the 1950s. Markowitz was a financial economist who sought to understand how investors could optimise their portfolio of investments to achieve the highest returns with the lowest amount of risk (Kassi et al., 2019). There are several studies that use market risk to measure financial health. For example, (Muriithi et al., 2016) examine the impact of market risk on the financial performance of commercial banks and found that market risk has a negative impact on the banks' profitability. A study by Jukonis (2022) found similar results but added that larger companies with higher leverage are more sensitive to market risk.

4.9 THEORETICAL FRAMEWORK FOR THE STUDY

4.9.1 Theoretical framework for objective one

Objective one of the studies seeks to examine how macroeconomic factors influence the financial health of listed food retail companies in the SADC region. To accomplish this goal, the application of the open systems theory will be used. The open systems theory is justified though its applicability in capturing macroeconomic forces beyond the company's control and parades a strong and optimal fit, particularly in the context of panel data regression. The theory was used to stabilise macroeconomic factors by pinpointing variables such as GDP, CPI, IR and ER, as influential factors impacting company financial health.

4.9.2 Theoretical framework for objective two

The open systems theory has limitations and cannot address internal factors (Tamplin, 2023). Therefore, objective two of the study utilised financial analysis to examine the

relationship between internal factors and financial health. The rationale for financial analysis is to compute and assess a company's financial liquidity, profitability and debt. This approach provides valuable insights into the internal financial dynamics (Kieso et al., 2019), which makes it the best fit as far as panel data regression is concerned. The model is unique because it stabilises internal factors of listed food retail companies in the SADC region.

4.9.3 Theoretical framework for objective three

Both the open systems and the financial analysis theory, as discussed above, have limitations and cannot address industry-specific issues. Therefore, to achieve the third objective of the study, the research employed the value-chains and agency theories. The value-chains theory suggests that industry-specific factors are unique and exclusive characteristics of the company (Walters and Rainbird, 2007b, Morris et al., 2021). The agency theory suggests that governance may influence company performance based on management style. In this study, a combination of value-chains and agency theories was found most appropriate for panel data regression, examining the correlation between industry-specific variables and financial health. The model is unique because it stabilises industry-specific factors of listed food retail companies in the SADC region.

4.10 CHAPTER SUMMARY

In this chapter, the relevant theories for the research study were scrutinised and the ones applied to fulfil each objective were identified. Objective one utilises the market risk theory to analyse macroeconomic factors related to company financial health. Objective two employs the financial analysis theory to examine the relationship between internal factors and financial health. Finally, objective three utilises both the value-chains theory and the agency theory to assess the correlation between industry-specific factors and company financial health.

While this chapter focused to the relevant theories, the next chapter will review empirical studies on the factors influencing financial health.

CHAPTER FIVE

REVIEW OF EMPIRICAL STUDIES ON THE FACTORS INFLUENCING FINANCIAL HEALTH

5.0 INTRODUCTION

The preceding chapter provided a detailed critique of pertinent theories and introduced additional theoretical perspectives. It then outlined the theoretical framework tailored to each specific objective of the study. However, this chapter focuses on reviewing literature related to factors affecting a firm's financial health, emphasizing the effective management of limited resources and the internal and external challenges influencing its performance. The determination of acceptable metrics for assessing a company's financial health remains a subject of diverse perspectives and scientific research. Among the multitude of tools available, financial ratio analysis stands out as a prominent method for evaluating the financial health of any company. The application of financial ratio analysis in the context of food retail companies serves to gauge the company's financial position and offers insights into its operational efficiency, management effectiveness, asset utilisation and profitability. This analysis plays a pivotal role in quantifying essential aspects, including liquidity, asset management, profitability and debt coverage. By providing a systematic assessment of these critical factors, ratio analysis contributes to a comprehensive evaluation of the company's performance and overall financial health (Nguyen et al., 2023). Hence, this chapter focuses on reviewing the existing literature concerning theories related to the determinants of financial health. The chapter culminates in an examination of empirical studies that explore the relationship between these variables and financial performance.

5.1 FACTORS INFLUENCING FINANCIAL HEALTH

A company's health is the culmination of its business activities across various divisions within the organisation. Companies employ a range of methods, both formal and informal, to control the factors influencing their health. According to Kasturi (2006), a company's health is contingent upon the effectiveness of its established policies. Company health encompasses numerous aspects, spanning from the internal environment to the external environment, encompassing factors such as human

capital, production, finance, administration, politics, technology, market dynamics and global events (Al-Musali and Ismail, 2014). Iswatia and Anshoria (2007) define a company's health as its ability to acquire and efficiently manage resources to gain a competitive advantage. However, Almajali et al. (2012) assert that the concept of company health is challenging in terms of both definition and measurement. Selecting the appropriate measure to evaluate company performance depends on the type of company and its specific objectives. In the field of strategic management, researchers have proposed various models to analyse financial health, yet there is limited consensus on the factors influencing financial performance. Some argue that studies on financial health should incorporate multiple criteria analyses. This multidimensional perspective suggests that different models will emerge, demonstrating various relationships between dependent and independent variables in the estimated models (Burca and Batrinca, 2014, Iswatia and Anshoria, 2007).

According to (Iswatia and Anshoria, 2007), company health can be approached in two ways: financial performance and non-financial performance. Financial performance, which is primarily the focus of this study measures variables directly linked to financial reports. In contrast, non-financial performance considers factors like customer service, employee performance, operational efficiency, product quality, cycle time and the efficiency of the supply chain. Walker (2001) states that company health can be assessed across three dimensions. The first dimension pertains to the company's productivity, followed by the profitability dimension and the third dimension examines market premium, which assesses the extent to which a company's market value exceeds its book value. Various authors (Saeed et al., 2013, Contributor, 2020, Msomi, 2022, Nguyen et al., 2023) typically classify company financial health into three clear dimensions: internal, external and industry-specific. Internal factors are under the company's control, whereas external factors extend beyond the company's management influence. These factors have the potential to either positively or negatively impact a company's financial health.

Numerous research studies have investigated the factors affecting the financial health of companies, but there has been limited attention to this topic concerning listed food retail companies operating in Africa and SADC regions in particular. Most studies on financial health have been conducted in sectors such as non-insurance, insurance,

banking and manufacturing (Nguyen et al., 2023). A few studies on food retail companies are primarily concentrated in regional blocs like East Asia, Europe and North America, with limited representation from Africa and varying research methodologies (Baldwin, 2012, Geneva, 2013, Outlook, 2014, Foster-McGregor et al., 2015). It is worth noting that Das Nair's research has exclusively centred on supermarkets from South Africa and not on listed food retail companies as a whole in SADC (Das Nair, 2018, Das Nair and Dube, 2016).

Supported by authors such as Egbunike and Okerekeoti (2018b) and Ganda (2021b), it is important to note that while there is limited research on the factors influencing the financial health of listed food retail companies in the SADC region, the financial characteristics under consideration are factors that can be applied universally across various companies. Therefore, this chapter will rely on a broad range of literature encompassing multiple studies that explore the determinants of financial health.

5.2 EMPIRICAL STUDIES ON INTERNAL FACTORS AND COMPANY HEALTH

5.2.1 Liquidity ratios

In theory, companies with higher levels of liquid assets can employ liquidity ratios as an additional internal source of funding, rather than resorting to debt, thereby resulting in reduced reliance on debt financing (Öztekin and Flannery, 2012, Asiani and Rahayu, 2024). Liquidity ratios assess a company’s capacity to settle impending debts by examining the relationship between its current assets and current liabilities. The current ratio and the quick ratio, commonly used indicators (Brigham et al., 2008), along with the cash ratio, are employed as variables in liquidity ratio. Both short-term and long-term creditors are strongly interested in a company's leverage levels because they signify the company's vulnerability to debt service obligations, including interest and principal repayments. Companies heavily reliant on debt financing offer creditors less safeguard in the event of bankruptcy (Batchimeg, 2017). Tumanggor (2020) and Wati et al. (2024) asserts that liquidity exerts a statistically negative influence on company performance. This viewpoint finds support from Ngumo et al. (2020), who align with Tumanggor's theory. However, other authors such as Ongore and Kusa (2013) and Afonina and Chalupský (2014) contend that there is no statistically significant relationship between liquidity and financial performance. In contrast, Kamande (2017) argues that liquidity does impact performance. The following sections

will review empirical studies examining the relationship between financial performance and both the CR and QR.

5.2.2 Current ratio

The financial analysis theory submits that keeping extremely high current assets may indicate ineffective use of resources. While a high current asset proposes sufficient liquidity, it could also suggest that a significant portion of assets is tied up in less productive sections Pirveli (2014) and Kieso et al. (2019), (Putri et al., 2024). Faruk and Habib (2010) and Endri et al. (2020) conducted studies on financial performance using ratio analyses in Bangladesh pharmaceutical industries. Their research findings indicated that current ratio influence financial performance, as measured by DuPont analysis. Another study to investigate the relationship between liquidity ratios and financial performance indicators, specifically profitability ratios, within the food industrial companies listed on the Amman Bursa for the period from 2012 to 2014. The sample consisted of eight industrial companies operating in the food sector and listed on the Amman Bursa. The study employed the Statistical Package for Social Sciences to test the hypotheses, utilising mean values, standard deviations and simple Pearson correlation coefficients. The findings of the study reveal a modest positive correlation between the current ratio and both operating profit margin and net profit margin. In another study, the current ratio demonstrated a positive association with ROA, serving as a metric for evaluating financial performance (Durrah et al., 2016).

The studies reviewed above demonstrate positive associations between the current ratio and financial performance, employing operating profit margin, NPM and ROA as measures of financial performance. However, a gap exists in the literature as comprehensive studies on financial health evaluation have not been conducted in the SADC as a whole and there is a lack of utilisation of ROE as a dependent variable. This gap might contribute to the ongoing debate on the optimal measurement of financial health, a topic that this study finds it imperative to investigate. Therefore, the hypothesis developed is as follows:

There is a positive relationship between current ratio and financial health.

5.2.3 Quick ratio

The financial analysis theory suggests that a higher quick ratio indicates the robust ability of a company to fulfil its short-term obligations (Pirveli (2014), (Nugroho and Nugroho, 2024). According to Uguru et al. (2018), the quick ratio, also known as the acid test ratio, is a fundamental working capital metric and a critical element in the financial assessment of a business. Quick ratio holds significant importance and demands careful consideration in all types of companies, irrespective of their nature (Dinku, 2013). Regardless of a business's size or nature, every organisation, whether profit-oriented or not, requires a specific level of working capital and effective management. This factor plays a crucial role in upholding the company's liquidity, sustainability, solvency and profitability (Atta et al., 2017, Ilham et al., 2024).

Faruk and Habib (2010) and Endri et al. (2020) conducted studies on financial performance using ratio analyses in Bangladesh Pharmaceutical industries. Their findings shown that quick ratio influence financial performance, as measured by DuPont analysis. Pandeirot et al. (2022) study aimed to assess the impact of the QR on the profitability of manufacturing companies in Indonesia, utilising three distinct dependent variables, namely NPM, ROA and ROE. A total of 158 manufacturing companies with publicly available financial statements spanning the period from 2012 to 2016 were subjected to regression analysis. The study revealed that the QR had a positive influence on NPM and ROA. However, the same effect was not observed with respect to ROE. Using ROA as a financial performance metric, Sari et al. (2022b) conducted research to explore the impact of the QR on the ROA in pharmaceutical companies within the sub-sector listed on the Indonesia Stock Exchange during the period from 2015 to 2019. Employing various data analysis methods, the study ultimately determined that the QR does not exert an influence on financial performance.

The studies reviewed above reveal diverse outcomes regarding the connections between the QR and financial performance. The existing gap lies in the absence of studies specifically focusing on listed food retail companies in the SADC. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between quick ratio and financial health.

5.2.4 Financial leverage

According to financial analysis theory, it is assumed that financial leveraging introduces specific financial risks within the company (Kieso et al., 2019). However, research indicate that financial leverage can have a favourable impact on a company's performance as it can be viewed as a mechanism for management discipline. Consequently, in accordance with the agency theory, a positive association between financial leverage and company performance would be anticipated. Moreover, according to the agency theory, profitable companies are inclined to favour debt over alternative sources to capitalise on the associated tax shield (Tripathy and Shaik, 2020). Nonetheless, this principle does not universally apply to companies carrying an excessively high debt load, as heightened indebtedness can result in substantial financial constraints, exerting a detrimental effect on company performance (Ilyukhin, 2015). Supporting this theory, a study conducted by Tripathy and Shaik (2020), with an objective to examine the relationship between profitability and financial leverage for 56 food processing companies listed on the BSE in India from 2000 to 2018, used pooled OLS, fixed effects and random effects models for their analysis. The results showed a significant and positive correlation between financial leverage and the financial performance. Authors who are in support of Tripath and Shaik results are Ganda (2021b) and Ramasamy et al. (2005), who found a positive relationship between leverage and financial health measured by ROA, FIV, Tobin’s Q. Conversely, Hutten (2014) reports contrasting findings in their examination of the relationship between leverage and company performance. Their study indicated an insignificant effect of leverage on ROE, which was employed as the company's financial performance metric. Likewise, examining leverage's diverse impact on the performance of 165 listed nonfinancial joint-stock companies in Bangladesh from 2007 to 2016, GMM analysis demonstrated a negative influence of leverage indicators on company performance, as measured by ROE and ROA. Moreover, the application of quantile regressions pronounced negative effect on performance in highly profitable companies compared to their less profitable counterparts (Das et al., 2022). Following the framework outlined by Hansen in 1999 for threshold regression modelling, a study by Kalantonis et al. (2021), investigating the empirical connections between leverage and corporate performance, with company size as the dependent variable. Utilising panel data encompassing 101 listed companies in Nigeria from 2003 to 2007, the

findings indicate that the adverse impact of leverage on company financial performance is most pronounced and statistically significant.

The studies reviewed above show varied results regarding the association between financial leverage and financial performance. The existing gap lies in the absence of studies specifically focusing on listed food retail companies in the SADC. This gap could contribute to the ongoing debate on whether financial leverage influences financial performance of listed food retail companies in SADC. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between financial leverage and financial health.

5.2.5 Inventory turnover

The financial analysis theory proposes the imperative of efficiently managing inventory to prevent wastage, avoiding undesirable financial implications (Kieso et al., 2019). Kwak (2019) delved into the evaluation of inventory turnover as an independent variable on company performance within the manufacturing sector. The study incorporated data from 421 manufacturing companies in Korea spanning the period from 2010 to 2018 based on the Altman's Z score approach. The research outcomes indicate that across the manufacturing industry as a whole, inventory turnover exhibited a negative correlation with various dimensions of financial performance, including gross margin, profitability, stability, productivity and overall company value. Another study sought to investigate the influence of inventory management, as quantified by inventory turnover, on company performance, with a focus on company profitability as measured by ROA and ROE. The study sourced its data from the Egyptian stock exchange market. For the analysis, EViews 12 was employed, encompassing both descriptive statistics and multiple regression. The findings from this research reveal a significant and positive link between inventory turnover and both ROA and ROE (Srour and Azmy, 2021, Ariani et al., 2024). In an ex-post facto study encompassing quoted consumer goods manufacturing firms in Nigeria, secondary data were collected from annual reports and accounts. The data underwent analysis through the application of a multiple regression technique to investigate the link between inventory turnover and company performance. The study revealed a non-

significant negative relationship between inventory turnover and financial performance measured by NPM and Operating Cash Flow to Sales ratio (Asuzu et al., 2019).

Even though the studies conducted by Kwak and Srour and Azmy, as indicated above, employed ROE to examine its correlation with various independent variables, the argument persists that such studies have not been conducted specifically on listed food retail companies within the SADC region. This gap may contribute to the ongoing debate surrounding whether inventory turnover influences the financial performance of listed food retail companies in SADC. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between inventory turnover and financial health.

5.2.6 Total assets turnover ratio

The financial analysis theory assumes that as the assets turnover decreases, there is a consistent decline in the company's efficiency in converting assets into revenue Pirveli (2014) and Kieso et al. (2019). Several studies have validated these claims. For instance, Antoun et al. (2018) conducted an empirical analysis using an unbalanced panel data set from 2009 to 2014, drawing from the BankScope database, World Development Indicators, and the Financial Structure and Development dataset. Their study, which focused on banks in Central and Eastern Europe, employed a fixed-effect panel regression method. The analysis used company size as a dependent variable and revealed a negative relationship between company size and assets. The primary objective of Al-ANI (2013) content analysis, which used annual reports from a subset of 28 out of 70 companies for the period 2008-2012, was to investigate the influence of assets turnover on the financial performance of select manufacturing companies listed on the Muscat Securities Market. The study assessed financial performance through metrics like ROA and ROE. While the study indicated assets to have no impact on ROA, the asset structure had an impact on ROE within the petrochemical sector. In the study by Busu et al. (2020) study, the objective was to examine the influence of fixed assets and other variables on financial performance, with net profit as the dependent variable, in the context of retail companies in Romania. Using an econometric model, the study tested and substantiated the hypotheses, employing a multilinear regression model analysed through the OLS method with the assistance of

the statistical software SPSS 23. The study's findings align with those of previous research, concluding that assets exhibit a positive and significant impact on net profit. Moreover, Sasongko et al. (2021) examined the relationship between various variables, including total assets turnover and the financial performance of retail trade sector companies listed on the Indonesia Stock Exchange (IDX) during the period from 2015 to 2018. The study conducted a quantitative analysis, employing multiple regression analysis to analyse the data. The study's specific findings indicated that total assets turnover had a partial effect on financial distress.

The literature indicates that the majority of studies examining the associations between the total assets turnover ratio and financial performance have been conducted outside the listed food retail industry. Although Sasongko et al.'s study focusses on the retail industry, there is still a debate about whether the results are applicable to listed food retail stores in the SADC region. This gap may contribute to the ongoing debate about whether assets turnover influences the financial performance of listed food retail companies in SADC. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between assets turnover ratio and financial health.

5.2.7 Return on assets (ROA)

The financial analysis theory postulates that higher ROA may stem from improved profits (Kieso et al., 2019, Alie et al., 2024). Lui (2013) shares that ROA is not a perfect metric, but it is widely utilised as an accessible financial measure for evaluating company performance. It provides a thorough overview of business performance by assessing both income statement outcomes and the assets required for business operations. ROA is less vulnerable to short-term earnings manipulations since many assets, like property, plant, and equipment, as well as intangible assets, involve long-term investments that are harder to adjust or manipulate quickly. This implies that ROA continues to be a reasonable measure of performance for only capital-intensive companies, a scenario not currently applicable to listed food retailers in developing countries like SADC, which are still labour-intensive. Developing countries are still lagging behind in upgrading their infrastructure, including adopting new technologies and as a result, they remain stagnant (Hall, 2016). An empirical study conducted by Sukmawati and Garsela (2016) and Surono et al. (2024) discovered that the higher the

level of ROA, the greater the income derived by shareholders in PT. Indocement Tunggal Tbk from 2009 to 2013. This is agreed by Arnold (2008) that the higher the ROA of a company, the better the company's financial performance because a high ROA attracts investors, as companies can leverage their assets effectively in business. Even though food retailers remain labour intensive, one may argue that the situation may differ if the total assets in the balance sheet are predominantly composed of current assets, including short-term investments, inventories, prepaids and receivables. This could be the case in the listed food retail companies in SADC.

The literature indicates that ROA is not advisable as a performance measure for labour-intensive companies such as the listed food retailers. For that reason, the study employed ROA as an independent variable, with the dependent variable being ROCE. It is also noted in the literature that studies on the relationship between ROA and financial performance have primarily focused on various other industries. This prompts a debate about the applicability of the results to listed food retail stores in the SADC region. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between ROA and financial health.

5.3 EMPIRICAL STUDIES ON INDUSTRY-SPECIFIC FACTORS AND COMPANY HEALTH

Das Nair and Dube (2016) found that the buying power of a global value chain company measured by the company's capacity to fulfil its current debts is a significant competitive advantage. Other factors shaping the value chain include investments in human capital, strategic marketing approaches, governance, inventory turnover, sales and addressing social challenges (Das Nair, 2018, Morris et al., 2021). General studies such as Faruk and Habib (2010) and Endri et al. (2020) suggest that industry-specific factors such as size, age, competitiveness, assets, leverage and inventory can also provide generalisable insights. (Sharma et al., 2019, Endri et al., 2020) indicate that industry-specific factors have a significant influence on financial health due to their direct impact on the operations and dynamics of a particular industry.

5.3.1 Human capital

In line with the value chains theory, the proficient utilisation of human resources hold the potential to improve the company performance (Katou, 2017). The study aimed to assess the impact of human capital on LPD financial performance by employing both the secondary data from LPD financial reports and questionnaires with a sample size of 50 respondents from Indonesia. The research employed both descriptive and inferential statistical analysis methods. Data processing techniques were implemented using Smart PLS applications. The findings of the research revealed that there was a positive relationship in the human capital construct; however, it was not statistically significant (Nuryani et al., 2018). Fathi et al. (2013) also conducted a study that aimed to investigate the impact of intellectual capital on financial performance. They collected empirical data from a panel comprising 49 Iranian companies listed on the Tehran Stock Exchange, categorised into three different industrial sectors. The data spanned a ten-year period from 2001 to 2010. The research employed various regression models to test the hypotheses outlined in the conceptual framework. The findings of the study demonstrated a significant and positive relationship between intellectual capital and financial performance, as measured by metrics such as ROE, ROA and GR. These results suggest that investing in human capital can add value to a company. Consequently, Shaneeb and Sumathy (2021) conducted an examination of the relationship between human capital and the financial performance of the top 81 Indian textile industries. They utilised the public's value-added intellectual capital coefficient (VAICTM) model for their analysis. In measuring the financial performance of these companies, the study considered ROA, productivity (ATO) and ROE as key metrics. The findings of the research indicated that human capital efficiency had a significant and positive impact on ROE, while it had an insignificant effect on productivity.

The literature suggests a connection between human capital and company financial performance. However, these studies, including Das Nair and Dube, exclusively focused on specific countries and did not cover the broader SADC region. This gap may contribute to the persisting debate regarding the impact of human capital on the financial performance of listed food retail companies in SADC. Therefore, this leads to the following hypothesis being developed:

There is a positive relationship between human capital and financial health.

5.3.2 Strategic marketing

According to the value chains theory, a robust strategic marketing approach has the potential to enhance revenue, customer engagement and brand perception (Flint, 2004, Seddaoui et al., 2024). The application of marketing strategies, including informational and relational approaches, adds value to customers and fulfils their needs. Consequently, satisfied customers become returning patrons, contributing to the company's prosperity (Buble et al., 2003, Rebiazina et al., 2024). Numerous studies with slightly varying outcomes have explored the impact of marketing strategy on company financial performance. For example, in a study conducted by Mohammadzadeh et al. (2013) on all Iranian pharmaceutical generic manufacturers listed on the Tehran Stock Market over a five-year period from 2006 to 2010, data analysis utilising ANOVAs confirmed that strategic alignment between financial and marketing aspects significantly influenced a company's profitability, leading to an increase in overall profitability. On the contrary, a study conducted by Jaakkola et al. (2010) in three European 'engineering countries', namely Austria, Finland and Germany, employing relative homogeneity and SEM analysis, identified negative connections between marketing and company performance. Another study was conducted to investigate the impact of strategic marketing activities on a company's financial performance. This research involved testing multiple hypotheses through the development and evaluation of a path model. The study utilised a representative sample of 152 small companies to examine the proposed path relationships. The results revealed that strategic marketing activities had a significant influence on a company's financial performance (Mukherji et al., 2015).

Most studies indicate a positive relationship between strategic marketing and company financial performance. However, these studies were conducted outside the listed food retail companies in SADC and relied on questionnaires for data collection. This gap may contribute to the ongoing debate surrounding the impact of strategic marketing on the financial performance of these companies. The present study will employ secondary data from financial statements to test the following hypothesis developed.

There is a positive relationship between strategic marketing and financial health.

5.3.3 Corporate social responsibility (CSR)

Within the value chains theory framework, CSR involves the integration of moral standards, social considerations and environmental practices (Lund-Thomsen and Lindgreen, 2014, Pardede et al., 2024). This means that in the food retail industry, CSR initiatives may encompass good practices, environmental management, ethical labour practices and community engagement. However, studies have reported differing impacts of CSR on financial performance, including positive, negative and neutral effects. A systematic review study conducted by McWilliams and Siegel (2000) and Coelho et al. (2023) highlights a specific limitation through their econometric investigation into the link between social and financial performance. Their study involved estimating the influence of CSR by conducting a regression analysis of company performance, considering corporate social performance as well as several control variables. The research findings indicate that CSR had a neutral impact on financial performance. Likewise, through a well-supported theoretical argument and the examination of a database covering 599 companies across 28 countries, Surroca et al. (2010) conclude that a direct relationship between corporate responsibility and financial performance is not evident. This study was built upon prior empirical findings that had initially suggested a positive link between social and financial performance. However, Surroca and colleagues demonstrate that these previous conclusions might have been inaccurate due to the researchers' failure to consider the mediating effects of intangible resources. From another 52 meta-analysis studies, comprising a cumulative sample size of 33 878 observations, Orlitzky et al. (2003) found that companies stand to benefit from their commitment to social responsibility.

Based on data gathered from 113 publicly listed United States companies operating in the software industry during the period from 2000 to 2005, Lin (2024) and Kim et al. (2018) determined that socially responsible activities positively impact a company's financial performance when the company is highly engaged in competitive actions. Conversely, this positive relationship is reversed when the competitive action level of the company is low. A study conducted by Nirino et al. (2020), which aimed to examine the influence of corporate social responsibility on the financial performance of companies in the food and beverage sector, involved collecting data from a sample of 190 companies within the food and beverage industry. The authors empirically assessed the model's validity through the application of ordinary least squares

regression analysis. The findings of the study indicated that corporate responsibility had a visible social impact, reflecting genuine societal concerns among stakeholders in the food and beverage industry. A similar study by Kong (2012), focusing on the relevance of corporate social responsibility within the food industry in China's stock market during the 2008 fiscal year, implies that the increasing incidence of events associated with corporate social responsibility have a substantial impact on the concerns of investors and customers. In essence, this suggests that companies operating in the food industry have the potential to attain long-term benefits from corporate social responsibility by enhancing their engagement in such activities.

Despite differing opinions on the relationship between CSR and company financial performance, the majority of studies identify a positive correlation between the two. However, these studies were carried out in developed countries outside the SADC region, where CSR might have distinct meanings and interpretations. This gap could contribute to the ongoing debate concerning the impact of CSR on the financial performance of listed food retail companies in SADC. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between CSR and financial health.

5.3.4 Competitiveness

Within the framework of value chains, competitiveness denotes a company's ability to outperform its competitors and accomplish a legitimate advantage in the market (Bayoumi et al., 2018). The ongoing debate surrounding the constituents of competitive factors for companies persists, with various viewpoints including cost control strategies, resource allocation, productivity, sales turnover and enhanced service delivery. In a study of 343 industries operating in Slovak heat industry, Horvathova and Mokrisova (2020) found a notable correlation between a company's financial performance and its competitiveness, which was measured through economic value added. In an analytical research led by Gonda et al. (2020), multiple related articles, reports and scientific literature sources were examined. Additionally, in-depth interviews and questionnaire surveys were conducted and the questionnaire's validity was verified through confirmatory factor analysis. The data were subjected to analysis and evaluation using a PLS-SEM model. The results of this comprehensive

investigation point to the paramount importance of aligning with consumer needs as the most critical competitive factor.

Singh and Samuel (2018) conducted a study that investigated the determinants impacting the competitive positioning of apparel retail stores in India. Their research approach encompassed an extensive literature review and solicitation of experts' opinions. Furthermore, they examined the interconnections among these identified factors using a structural modelling technique known as the interpretive structural modeling (ISM). To categorise these factors, they employed a fuzzy matrix of cross-impact multiplications. The factors under scrutiny included the retail environment, information and communication technology, technology adoption and human capital. Morschett et al. (2006) conducted a study with the objective of constructing a framework for competitive strategies in the food retailing sector. They employed a two-way survey method comprising two distinct phases. In the first phase, they surveyed managers to measure their perceptions regarding the dimensions of competitive advantages that food retailing endeavours to attain. The second phase focused solely on consumers and sought to understand their perceptions of these same factors. The findings from both phases of the study converged on three key factors: sales, quality and convenience. Utilising time-lagged data obtained from a sample of 194 mining companies, Adomako and Tran (2022) substantiated the hypotheses they proposed. The results demonstrated that the link between company competitiveness measured by environmental compliance and financial performance is significant. In an investigation combining exploratory and confirmatory factor analysis, followed by the application of structural equations modelling with a sample size of 214 drawn from brewing companies spanning across 12 European economies, Zanotti et al. (2018) found a significant relationship between the competitive construct and the financial performance of the company.

If sales are utilised as a competitive measure for a company, Ajagbe et al. (2014) are of the view that, especially for newer companies or products and after some time, the company will need to engage in sales promotion and marketing to stimulate consumer purchases and ensure product relevance. However, it is worth noting that sales promotion differs from marketing in that it provides consumers with an incentive to buy, whereas marketing simply offers a reason to buy.

The literature reveals that researchers have not reached a consensus on the appropriate measure of competitiveness. However, this study will adopt the theories of Morschett et al., asserting a connection between financial performance and sales as a competitive measure. This decision is grounded in the recognition that sales represent a primary metric for assessing retailer performance (Morschett et al., 2006). Consequently, this leads to the development of the following hypothesis:

There is a positive relationship between competitiveness measured by sales revenue and financial health.

5.3.5 Company age

The theory of value chains claims that as a company undergoes the aging process, it certainly matures, resulting in the development of more efficient and effective processes, including aspects such as supply chain management and other operational activities (Ndubuisi and Owusu, 2023). It is important to note that age does not influence performance since a company cannot reverse the passage of time. Instead, as the company matures over time, costs tend to increase as assets become obsolete and investment starts to decline (Loderer and Waelchli, 2010). However, this may not hold true for other companies. For example, various authors (Ramasamy et al., 2005, Ganda, 2021a) found a positive correlation between a company's financial health and its age. Akben-Selcuk (2016) study aimed to explore the influence of company age on the profitability of Turkish companies that are listed on Borsa Istanbul. The research employed a dataset encompassing the years spanning from 2005 to 2014, featuring an average of 302 non-financial companies per year. To analyse the data, a fixed effects model with robust standard errors was utilised. The findings of the study revealed a negative and convex relationship between company age and profitability, as assessed by metrics such as ROA, ROE and GPM. Another study on companies in the Sri Lankan hotels and travel sector was conducted by Sritharan (2015). He utilised fixed and random effect econometric estimation models, analysing data from 2008 to 2012. The study's findings indicated that the relationship between age and financial performance in these firms remained unclear or inconclusive.

The literature indicates a consensus regarding the relationship between company age and financial performance, suggesting that age does not necessarily enhance

performance. Instead, age has implications on the value of assets, with costs increasing as assets depreciate over time. However, these studies do not cover listed food retail companies in SADC, which this study aims to address. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between company age and financial health.

5.3.6 Company size

Bigger companies normally enjoy economies of scale due to the expansion of their size. This growth enables them to negotiate more favourable deals with their business partners, establish efficient procurement and distribution channels, thereby decreasing costs and improving their financial position (Urata and Baek, 2020). Company size significantly influences profitability due to economies of scale, a key concept in the traditional view of businesses (Indrawati et al., 2023). Large companies, with substantial total assets, are perceived as having favourable prospects during stable periods, enabling them to generate profits compared to smaller counterparts (Chen et al., 2005). The competitive advantage of large-scale companies stems from their expansive market presence, providing ample opportunities to secure substantial profits. Ngumo et al. (2020) examined determinants of financial performance of microfinance banks in Kenya. The research design employed for the study was descriptive in nature and it relied on secondary data gathered from seven microfinance banks over a five-year period spanning from 2011 to 2015. The data collected were subjected to analysis using correlation and regression analysis techniques. The study's results indicated a positive and statistically significant correlation between firm size and the financial performance. In their research, utilising self-administered questionnaires with 165 respondents from multinational corporations in South Africa, van der Berg et al. (2021) discovered that company size significantly influences a company's financial health. This is confirmed by various authors (Ramasamy et al., 2005, Ganda, 2021a, Salman and Yazdanfar, 2012, Sharma et al., 2019). From their studies, employing diverse research methods across various industries (manufacturing, companies falling under the Carbon Disclosure Project, health, transport and trade in metals) and covering countries such as Malaysia, South Africa, Sweden and India, they found a positive relationship between financial performance and company size.

The literature above confirms harmony among researchers regarding the relationship between company size and financial performance. Nevertheless, the previous studies have not been conducted in the listed food retail companies in SADC, creating the current gap that this study seeks to address. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between company size and financial health.

5.3.7 Company governance

Agency theory suggests that effective corporate governance mechanisms can align the interests of shareholders (principals) with those of management (agents), leading to improved company performance (Rozeff, 1982, Linh, 2024). Nuhiu et al. (2017) conducted a study to evaluate the financial performance of commercial banks in Kosovo, focusing on financial metrics such as ROE, ROA, and Net Interest Margin. The research employed both time series and panel data analysis methodologies, utilising regression analysis. The study found that strong company governance positively impacts financial performance. The positive relationship between governance and financial health is also confirmed by (Endri et al., 2020). Similarly, a study by Ongore and Kusa (2013) examined the factors influencing financial performance among 37 commercial banks in Kenya. Using a linear multiple regression model and Generalized Least Squares (GLS) analysis, the study estimated parameters based on data covering the period from 2001 to 2010. The findings indicated that governance significantly affects the financial performance of Kenyan commercial banks. Additionally, an empirical study by Scafarto and Dimitropoulos (2018) applied a fixed-effect econometric model to a panel data set of 16 Italian football clubs over a nine-year period, resulting in 144 firm-year observations. This study found a positive relationship between governance representation and financial performance.

There is consensus among scholars regarding the impact of governance on company performance, suggesting that companies with good governance tend to prosper more than those with poor leadership. However, the reviewed studies have not been conducted in the listed food retail companies in SADC, creating the current gap that this study aims to address. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between company governance and financial health.

5.4 EMPIRICAL STUDIES ON MACRO-ECONOMIC FACTORS AND COMPANY HEALTH

5.4.1 Consumer price index (CPI)

The CPI, which measures inflation by tracking changes in the prices of a basket of goods and services, has also attracted substantial research interest as another macroeconomic factor. According to Ginsburg (2022) and (Jahidah et al., 2024), retailers depend on the global supply chain and as a result, the CPI, influenced by inflation, can impact the prices of goods and services, as well as consumer buying habits. Nevertheless, the empirical findings in this area have not shown consistent results (Mokhova and Zinecker, 2014). In a study conducted by Nuhiu et al. (2017), the objective was to assess the financial performance of commercial banks in Kosovo by examining financial indicators like ROE, ROA and Net Interest Margin (NIM). The study employed time series and panel data analysis through regression methods. The research findings show that the Consumer Price Index (CPI) had a negligible effect on the financial performance of commercial banks. In a separate empirical study by Antoun et al. (2018), an unbalanced panel data set from 2009 to 2014 was utilized, drawing data from the BankScope database, World Development Indicators, and the Financial Structure and Development dataset. This study concentrated on banks in Central and Eastern Europe and used a fixed-effect panel regression method. Company size being used as a dependent variable, the findings indicated that the size and CPI were negatively related. Notably, Frank and Goyal (2009) discovered a positive correlation, which contradicts the earlier hypotheses.

In various studies across different industries, prior researchers obtained diverse results regarding the impact of the CPI on company financial performance. However, proceeding with the assumptions of Ginsburg that CPI in a supply chain does influence the prices of goods and services, this study formulated the following hypothesis within the context of listed food retail companies in SADC:

There is a positive relationship between CPI and financial health.

5.4.2 Gross domestic product (GDP)

According to Knezevic et al. (2011) and Bilovodska and Ivanchenko (2024), the retail sector is a crucial source of employment and makes a significant contribution to the creation of GDP. This implies that changes in GDP can influence the performance of businesses, including retail companies. Although most research on the link between GDP and financial performance has focused on the banking sector, Pacini et al. (2017) explored how certain macroeconomic factors affect company performance by analyzing panel data from 2000 to 2014 for the top 100 UK companies. The study concluded that there is a direct and positive correlation between GDP and company financial performance. This finding is consistent with the positive relationship observed between GDP and financial performance in banking sector studies. For instance, Ongore and Kusa (2013) examined the factors influencing financial performance in 37 commercial banks in Kenya using a linear multiple regression model and GLS analysis on data collected from 2001 to 2010. Their study found a significant positive relationship between GDP and financial performance. Similarly, research by Istan and Fahlevi (2020) in the context of Sharia banking in Kenya showed that GDP has a substantial positive effect on financial performance, particularly as measured by ROA.

The literature shows that prior researchers obtained similar results regarding the impact of GDP on company financial performance. However, the reviewed studies have not been conducted in the listed food retail companies in SADC, creating the current gap that this study aims to address. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between GDP and financial health.

5.4.3 Exchange rate

Before 1972, the global monetary system operated under a fixed exchange rate regime, where currencies were pegged at a constant value against the U.S. dollar. However, the shift to a flexible exchange rate system in 1972 introduced exchange rate fluctuations, which have since become a major concern for investors, analysts, managers, and shareholders. In this system, currency values are influenced by supply and demand dynamics in the foreign exchange market, leading to increased exposure to foreign exchange risk for companies. As international trade expands, businesses

face growing susceptibility to these currency fluctuations. In general, companies face three primary types of foreign exchange risk: translation exposure, transaction exposure and economic exposure (Willy and Ogeto, 2012). Nonetheless, the influence of ER on company performance has shown mixed results in many studies. For example, Ahmed (2015) and Yemi and Nakawooya (2024) carried out a descriptive study to examine how foreign exchange rates affect the performance of commercial banks. The study revealed that foreign exchange rates negatively impacted the financial performance of commercial banks listed in Kenya. In contrast, Santosa (2019) conducted research using financial data from manufacturing firms on the Indonesia Stock Exchange between 2013 and 2018. Through multiple regression and moderated regression analysis, the study found that exchange rates influenced financial performance both before and after the mediation process. Santosa's findings align with the research paper by Georgiadis et al. (2020) on global value-chain participation and exchange rate pass-through. Their study discovered that the ER to export goods and services has been higher in economies displaying a greater global value-chain. Additionally, the exchange rate to import goods and services has been lower in economies where trading partners show a greater global value-chain. Conversely, Kang and Dagli (2018) found that increased involvement in the global value chain reduces the influence of the ER on exports. A systematic review study conducted by Auboin and Ruta (2013) acknowledged that companies engaged in international trades are vulnerable to ER implications. A similar study by Quesada et al. (2012), which investigated critical factors influencing supply chain management in the US Pallet industry, found that a company within a value chain is vulnerable to uncertainties from foreign countries.

The literature indicates that earlier studies investigating the association between ER and business performance have not been conducted in the listed food retail industry in the SADC, creating the current gap that this study aims to address. Therefore, this leads to the development of the following hypothesis:

There is a positive relationship between ER and financial health.

5.4.4 Interest rate

The notion that the impacts of interest rates are integrated into the inflation rate is a belief put forth by Deesomsak et al. (2004) and Jahidah et al. (2024). Nonetheless, various studies have uncovered substantial mixed results between interest rates and financial performance. In the examined literature, Antoniou et al. (2008) and Mokhova and Zinecker (2014) both observe adverse relationships while investigating the macroeconomic aspects of corporate debt financing levels in European countries. Research into the influence of interest rates on financial performance has predominantly centred on the banking and insurance sectors, as exemplified by studies like those carried out by Wambari and Mwangi (2017) on Kenyan commercial banks. Their findings indicate a notable positive correlation between interest rates and financial performance. Conversely, when examining the regression results from insurance companies, Mboga (2015) and Mulyati and Widhiastuti (2024) research identifies a negative impact of interest rates on financial performance, as measured by the ROA of insurance companies in Kenya. Odalo et al. (2016) conducted a study that employed a combined descriptive and causal approach, using questionnaires and secondary data from seven agricultural companies, sourced from the Nairobi Securities Exchange and CMA records. The sample included 220 respondents from different finance departments and the analysis employed multivariate panel data analysis, specifically regression and correlation analysis. Their findings reveal a positive and significant relationship between interest rates and financial performance, as measured by ROA, ROE and EPS. Njoroge (2013) study aimed to examine the relationship between interest rates and the financial performance of firms listed on the Nairobi Securities Exchange. Using regression analysis and data spanning from 2008 to 2012, the study reveals that a linear regression model could effectively predict financial performance for firms in industries where a statistically significant relationship was identified.

Previous research has not explored the relationship between interest rates and the financial performance of companies within the listed food retail industry in the SADC. While existing studies present inconsistent findings regarding this connection, our study, influenced by previous studies to investigate whether a correlation exists between interest rates and financial performance. Consequently, we formulate the following hypothesis to test this potential link:

There is a positive relationship between interest rate and financial health.

5.5 OTHER FACTORS

Ngumo et al. (2020) investigated the factors influencing the financial performance of microfinance banks in Kenya. The study utilized a descriptive research design, drawing on secondary data collected from seven microfinance banks over a five-year period from 2011 to 2015. The analysis involved the application of correlation and regression techniques. The findings revealed a positive and statistically significant relationship between operational efficiency and financial performance.

Ngumo et al. (2020) explored the factors influencing the financial performance of microfinance banks in Kenya using a descriptive research design. They analyzed secondary data from seven microfinance banks over five years, from 2011 to 2015, employing correlation and regression analysis. The study found a positive and statistically significant relationship between capital adequacy and financial performance. Similarly, Ongore and Kusa (2013) examined the determinants of financial performance among 37 commercial banks in Kenya using a linear multiple regression model and GLS analysis on data from 2001 to 2010. Their results highlighted the significant impact of capital ratios on bank performance. Additionally, Kamande (2017) conducted a panel data study on 11 commercial banks in Kenya over a five-year period from 2011 to 2015. The study revealed a significant positive correlation between ROA and capital adequacy.

Kamande (2017) conducted an explanatory study using panel data to investigate how bank-specific factors affect the financial performance of 11 commercial banks in Kenya over a five-year period from 2011 to 2015. The study focused on return on assets (ROA) as the dependent variable and earnings as the independent variable. The results showed a significant positive relationship between ROA and earnings. Similarly, Antoun et al. (2018) analyzed data from 2009 to 2014, sourced from the Bank Scope database, World Development Indicators, and the Financial Structure and Development dataset. Their study, which used a fixed-effect panel regression model, focused on banks in Central and Eastern Europe and found a negative relationship

between company size and bank earnings. In another study, Ngumo et al. (2020) investigated the factors affecting the financial performance of microfinance banks in Kenya. Utilizing a descriptive research design and secondary data from seven microfinance banks over a five-year period (2011–2015), they applied correlation and regression analysis techniques. The study revealed a negative and statistically insignificant relationship between credit risk and financial performance.

While existing literature provides valuable theoretical perspectives on the role of cash in a company's financial performance, Karaca and Savsar (2012) specifically explored how the cash ratio affects financial performance in the Food-Drink-Tobacco and Basic Metal Industry sectors listed in the ISE 100 index in Turkey. Their panel data analysis, which covered 36 companies from 2002 to 2009, found a negative correlation between the cash ratio and financial performance. They measured financial performance using a firm value calculation, defined as market value minus total financial debts, liquid assets, and marketable securities.

Conversely, Maxim and Bărbuță-Mișu (2021) undertook an analysis of how the cash ratio influenced the profitability of retail companies in Romania. Their study encompassed a survey of 62 companies, with data sourced from their annual balance sheets. These data were subjected to processing and analysis using the multiple regression technique for panel data. The research findings demonstrated a statistically significant and positive impact of the cash ratio on the financial performance of companies using net profit as a financial performance metric. Obeidat et al. (2021) investigated the link between the cash conversion cycle and the financial performance of six chemical companies listed on the Amman Stock Exchange over the period from 2010 to 2019. Employing both multiple and single regression models, their study highlighted a notable effect of the cash ratio on financial performance, with return on equity (ROE) used as the measure of financial performance. In Ramazani et al. (2018) study, the assessment of the connection between cash flow management and ROA as a financial performance metric for companies in Iran was conducted, drawing upon data from 155 companies listed on the Tehran Stock Exchange for the period 2009 to 2016. Through the application of panel data and multivariable regression, their findings pointed to an obvious relationship between cash management and the enhancement of financial performance. Oladimeji and Aladejebi (2020) research paper investigated

the influence of cash management on the profitability of small and medium-sized enterprises (SMEs) in Nigeria. The study employed a quantitative research approach, utilising pertinent secondary data sourced from the annual financial reports of chosen SMEs. Regression analysis was applied and the results indicated that over the period from 2014 to 2018, no significant relationship was observed between cash management and the profitability of SMEs.

5.6 CHAPTER SUMMARY

This chapter made it clear that while there is a scarcity of specific studies focusing on the determinants of financial health in retail companies, not to mention within the SADC region, an examination of the existing literature reveals that the financial health of companies is shaped by a triad of influential factors. These encompass internal determinants, industry-specific variables and broader macroeconomic indicators. Internal determinants encompass key financial metrics such as liquidity ratios, current ratio, cash ratio, quick ratio, financial leverage, inventory turnover and total assets turnover ratio. Industry-specific factors play a pivotal role and comprise aspects like human capital, strategic marketing, corporate social responsibility, competitiveness, company age, company size and company governance. Macro-level economic factors, including the consumer price index, gross domestic product, exchange rate and interest rate, are also substantial drivers that impact the financial health of companies. These factors, as mentioned, are conceptualised as key drivers of a company's financial health. The literature review draws insights from a diverse range of studies spanning industries such as banking, insurance, retail, manufacturing, chemicals, small businesses and others. Indicators of a company’s financial health can be broadly categorised into either accounting-based or market-based measures. Among the most prevalent accounting-based indicators used to assess financial health are metrics such as ROA, ROE, operating margin and NPM. In contrast, market-based indicators, including metrics like return on stock, Tobin’s Q and earnings per share, are typically more relevant for companies whose primary business revolves around financial markets and trading on stock exchanges. This study focuses on food retail companies listed on the stock exchanges in the SADC region and it is expected to display some degree of uniqueness from other corporate entities, potentially resulting in differing outcomes.

CHAPTER SIX

RESEARCH METHODOLOGY

6.0 INTRODUCTION

The last chapter focused on reviewing literature related to factors affecting a firm's financial health, emphasizing the effective management of limited resources and the internal and external challenges influencing its performance. This chapter offers an overview of the research methods employed in this study, encompassing the type and source of the gathered data, the approach to data analysis and interpretation and how these elements contribute to addressing the study's research objectives. The chapter starts by detailing the research design and target population. It proceeds to outline the measuring instrument, diagnostic test models, estimating techniques and the research method utilised in this study. The chapter concludes with a summary.

6.1 RESEARCH DESIGN

The study uses a correlational research design. Correlational research is useful for determining the presence and degree of correlations between variables without changing them. This is especially important when the research study questions emphasises establishing connections rather than causality (Privitera and Ahlgrim-Delzell, 2018). The three objectives of the study were quantitative, the degree of relationship among variables is measured using statistical techniques in correlational design, which is in line with the quantitative data frequently available from secondary sources (Levitt et al., 2018). As shown in Table 6.1, the study identified 4 590 outlets in the SADC region during the study period. However, the financial statements of these outlets were not presented on a country-by-country basis; instead, disclosure occurred at the holding company level. This resulted in the inclusion of four companies: Shoprite Holdings Ltd, SPAR Group Ltd, Pick n Pay and Woolworths Holdings Ltd. Therefore, there were 116 observations, derived from the four companies over the 29-year period from 1994 to 2022.

Delice (2010) suggests that a sample size of more than 30 is considered adequate for quantitative research. Nyamita (2014) adds that a response rate between 15% and 20% is typically seen as acceptable by researchers, with 10% being the lowest

threshold. However, in this particular study, the data corresponds exactly to the sample size of the four companies, achieving a 100% response rate.

Table 6.1: Listed food companies in SADC as at 2022

Country name	**Shoprite Holdings Ltd**	**SPAR Group Ltd**	**Pick n Pay**	**Woolworths Holdings Ltd**
South Africa	2 472	898	1 910	719
Angola	37	0	0	0
Botswana	33	35	13	22
Comoros	0	0	0	0
DRC	3	0	0	2
Eswatini	30	0	28	3
Lesotho	29	0	4	17
Seychelles	0	0	0	3
Tanzania	0	0	0	0
Mauritius	0	0	0	4
Zambia	52	2	21	0
Madagascar	0	0	0	0
Mozambique	27	13	0	3
Malawi	5	0	0	4
Namibia	99	33	40	2
Zimbabwe	0	39	64	4
Total number of outlets	**2787**	**1020**	**2 080**	**783**

Source: Self developed by researcher

The rationale for incorporating data from 1994 to 2022 lies in its representation of challenging periods in the SADC economy; 1994 is marked by the enduring impact of the South African democratic liberation, the 2008 US crisis, the COVID-19 pandemic in 2020 and subsequently, the economic turbulence stemming from the conflicts between Ukraine and Russia.

6.1.1 Data source, collection tools and software

The financial statements served as the basis for collecting data across the companies. The four food retail companies under study have listed shares and report their financial statements to the JSE. Therefore, the researcher was able to retrieve their financial

data from the McGregor BFA Library online database. Their financial statements underwent an auditing process before publication, establishing them as reliable sources of information for this study. There were 116 observations, derived from the four companies over the 29-year period from 1994 to 2022. Information not present in financial statements, such as company age and macroeconomic indicators, was sourced from online platforms, including reports from the IMF.

The study's relevant data consisted of financial statements from retail stores listed on the JSE between 1994 and 2022, specifically the Statement of Financial Position and Income Statement. To build the required variables, the financial statements were used. The study determines the significance of spurious variables that affect financial health and macroeconomic, microeconomic and industry-specific factors using panel data technique. In many respects, panel data are preferable to cross-sectional and time series data since it entails the collection of observations on cross-sections of units over many time periods. Panel data provides more variations, reduces collinearity among independent variables and increases degrees of freedom, resulting in improved estimation (Baltagi, 2008; Brooks, 2008). Furthermore, panel data indicate that firms are heterogeneous, allowing researchers to adjust for observable heterogeneity, hence eliminating biases caused by the presence of specific impacts (Baltagi, 2008; Hsiao, 2003). It allows the researcher to examine how the dependent variable is adjusted in response to variations in the independent variable's values. Consequently, panel data offer reliable approximations for dynamic equations.

STATA was utilised to compute data for the study. Data computed aimed to evaluate the impact of macroeconomic factors, internal factors and industry-specific factors on the financial health of the listed food retail companies in the SADC region. The dependent variable for the study was the return of capital employed (ROCE). This variable serves as a representative measure of the financial health. Gereffi et al. (2001) assert that ROCE is the most suitable profitability measure for the retailing industry.

6.2 VARIABLE DESCRIPTION

The subsequent independent variables are listed in Table 6.2.

Table 6.2: Research variables

Variable	Measure
Dependent variable (Y)	
Return on capital employed (ROCE)	Net profit/Shareholders' equity + Long term liabilities x 100%
Financial health variable	
Independent variable (X)	
MICROECONOMIC FACTORS	
Internal	
Quick ratio (QR)	Current assets - Clos inv/Current liabilities
Return on assets (ROA)	Net profit/Total assets x 100%
Current ratio (CR)	Current assets/current liabilities
Leverage (LEV)	Total liabilities/Total assets
Total asset turnover ratio (ATR)	Sales/Total assets x 100%
Stock turnover (ST)	Cost of sales/Ave inventory
Industry-specific	
Firm size (Size)	Log of Total Assets
Firm age (Age)	Number of year company has been operating
Company competitiveness (CC)	Sales
Human capital (HC)	Staff cost
Marketing strategy (MS)	Marketing costs
Governance (G)	Number of board of directors + Co secretary
Social responsibility (SR)	Donations to corporate social investments
MACROECONOMIC FACTORS	
Consumer price index (CPI)	Consumer price index
Interest rate (IR)	Interest rate linked to the SA prime rate
Exchange rate (ER)	Exchange rate (Dollar)
Gross domestic product (GDP)	GPD growth rate per annum

Source: Self-developed

6.3 DATA ANALYSIS

6.3.1 Descriptive Analysis

Houston (2004) states that within the finance discipline, to which this study belongs, secondary data measures are widely accepted and strongly favoured over self-report scale measures, in other words, primary data. Subsequently, the descriptive statistical analysis method (summary statistics and correlation statistics) will be employed to assess the degree of financial health and to compare the relations between the study variables.

6.3.2 Descriptive statistics

The process of organising and summarising data to make it comprehensible and interpretable is known as descriptive statistics. They offer concise synopses of the measurements and the sample. Because they enable researchers to offer quantitative descriptions in an understandable format, descriptive statistics are crucial because it

presents a clear and succinct summary of a lot of data, establish a foundation for additional statistical analysis, make it easier to compare data from many sources and in order to facilitate decision-making, emphasise important trends and patterns (Cooksey and Cooksey, 2020, Baffoe-Djan and Smith, 2019). Descriptive statistics are used in many different fields, demonstrating its relevance and universality in research and decision-making.

6.3.3 Pairwise correlations analysis

Correlation analysis is a statistical method used to evaluate both the direction and strength of the relationship between two variables. This technique assesses how changes in one variable correspond to changes in another. The result of this analysis is the correlation coefficient, which ranges from -1 to +1 (Asteriou and Hall, 2021). Researchers can learn a great deal about the underlying patterns and dynamics in their data by measuring these interactions. The study will employ Pearson Correlation analysis to explore the association between the variables. The Pearson correlation coefficient (r) formula is:

$$r = \frac{\sum(x_i - x^-)(y_i - y^-)}{\sqrt{\sum(x_i - x^-)^2 \sum y_i - y^-)^2}} \quad \text{.....(6.1)}$$

6.4 INFERENTIAL STATISTICS

A subfield of statistics known as inferential statistics deals with drawing conclusions about populations from sample data. Descriptive statistics provide an overview of a data set's features, whereas inferential statistics use those summaries to infer relationships and forecast future events. Because it enables hypothesis testing, estimating and extrapolating results from a sample to a broader population, this area of statistics is essential to research (Wooldridge, 2019, Fisher and Koven, 2020).

6.4.1 Fixed effects

Fixed effects models account for unobserved variables that are constant over time but vary across entities like companies or countries. The data used in this study include observations across four firms (SPT, PnP, SP and WLW) and 29 time units (1994–2022). Fixed effects models are appropriate for this study because the firms and years

chosen are fixed and therefore the results are projected onto these specific firms and years. The random effects models apply because there are no additional firms in the population onto which the results could be projected.

The works of Hedges and Vevea (1998) and Rowland and Torres (2004) have made notable contributions to the understanding of static panel models. It is worth noting that the use of these models will deem suitable for the current study due to the nature of the selected companies, variables and years, for example, a large T (29 years) and small N (4 companies). The results will be extrapolated specifically to four identified listed food companies and the designated years straddling from 1994 to 2022.

In the field of psychology, the primary statistics often averaged across studies include the correlation coefficient (r) or the standardised difference between means (the d statistic). The standard error *(SE*) computed for the mean d or r is determined by the sampling error inherent in the mean. This sampling error stems from two main sources: simple sampling error, which is estimated using the sampling error variance formula for d or r; and sampling error variance resulting from variations across studies in the underlying population values S_δ^2 or S_ρ^2. A number of authors (Field, 2005, Hunter and Schmidt, 2000, Schulze, 2004) share that fixed effect models exclusively address the first source of sampling error while disregarding the second source. Therefore, in fixed effect models, the estimation of sampling error variance for the meta-analysis mean remains accurate only if S_δ^2 = 0 or S_ρ^2 = 0.

In alternative scenarios, fixed effect models tend to underrate sampling error variance, resulting in an underestimation of the SE of the mean d or r. This underestimation leads to confidence intervals (CIs) that are narrower than they should be. Also, it contributes to inflated type 1 error rates (Field, 2005, Hunter and Schmidt, 2000, Schulze, 2004).

The procedure outlined by Hedges and Olkin (2014) stands as the prevailing fixed effect method, widely utilised in meta-analysis. In this approach, the simple sampling error variance (V_{ei}) is initially computed for each study and the reciprocals of these

values ($\frac{1}{V_{ei}}$) are designated as the weights (W_i). These weights are then employed to calculate the mean d value:

$$\hat{\delta} = \bar{d} = \frac{\Sigma w_i d_i}{\Sigma w_i} \quad \text{.....(6.2)}$$

The sampling error variance of this mean (S_{ed}^2) – or more precisely, its square root, $SE_{\bar{d}}$ – is employed to calculate the CI in the customary manner. If a significance test is conducted on the mean, it is also reliant on this standard error (*SE*). The fixed effect procedure developed by Rosenthal and Rubin (1982) deviates in only minor aspects, as noted by Field (2005). If the effect sizes of the studies are in the d metric, the estimation of the simple sampling error variance for a single study is computed as follows:

$$V_{ei} = \frac{N_1+N_2}{N_1N_2} + \frac{d^2}{2(N_1+N_2} \quad \text{.....(6.3)}$$

In the context where N_1 and N_2 denote the sample sizes in the two groups being compared and d represents the standardised mean difference between the two groups (Nelson et al., 1990, Hunter and Schmidt, 2004), the d statistic is typically adjusted to account for its slight positive bias stemming from small sample size. Equally, when r is the statistic employed, it is corrected for its slight negative bias before being converted into Fisher's z metric. In scenarios where the sampling error variance remains constant throughout the meta-analysis period, the mechanics of the fixed effect procedure become more understandable. In this context, the average of these values across studies is:

$$\bar{V}_e = \frac{\Sigma V_{et}}{k}. \quad \text{.....(6.4)}$$

The sampling error variance is σ^2 or V_{ar} of the mean and the *SE* are determined by the following equations.

$$S^2_{e\bar{d}} = \frac{\bar{v}_e}{k}. \quad \text{.....(6.5)}$$

and

$$SE_{\bar{d}} = \gamma \frac{\bar{V}_e}{k}. \quad \text{.....(6.6)}$$

In situations where sampling error differs among studies, the equation for sampling error variance takes a distinct form.

$$S^2_{e\bar{d}} = \frac{1}{\Sigma w_i}, \quad \text{.....(6.7)}$$

Here, the w_i represent the reciprocal of where V_{ei} where $1/V_{ei}$. The *SE* is then applied alongside the mean d to calculate the CI conventionally (Nelson et al., 1990, Hunter and Schmidt, 2004).

The literature has provided substantial support for the utilisation of fixed effect models due to their capacity to yield consistent estimators. Consistency in estimation refers to the differentiation of values around their respective sample means, as elucidated by (Blundell et al., 2001).

The utilisation of fixed effect, specifically the LSDV approach, efficiently incorporates cross-sectional variation through the adoption of dummy variables, as highlighted by Andrews et al. (2006) and Kezdi and Sevak (2004). However, caution is advised by Hayes and Preacher (2014) when dealing with large sets of dummy variables. They argue that the estimation process will require a substantial number of degrees of freedom, which may significantly impact the outcome of the results.

Over the observable time period of the variables under investigation, while μ_{it} is the stochastic error term assumed mutually independent and normally distributed according to:

$\mu_i \sim N(0, \sigma_{\mu i}^2)$ $\sigma_{\mu i}^2 = \sigma_\mu^2$ .....(6.8)

$i = 1,\ldots,N$, $t = 1,\ldots,T$

$V_{it} \sim N(0, \sigma_{v_{it}}^2)$ $\sigma_{v_{it}}^2 = \sigma_V^2\ h(Z_{it}\gamma)$ .....(6.9)

The parameters of interest in the analysis are the β coefficients, which represent the relationships between variables under consideration. However, in the presence of heteroskedasticity, obtaining consistent estimates of these parameters becomes possible, but their efficiency is compromised. Correcting for heteroskedasticity becomes crucial, as it can make the difference between significant and insignificant estimates. This is because the least squares estimated-variance, when ignoring heteroskedasticity, tends to underestimate the actual variance and may not necessarily be larger than the variance estimated using GLS methods.

If one presumes that $E[\mu, x] \neq 0$, estimates derived from the mentioned error components model will exhibit inconsistency and inefficiency owing to endogeneity. In such instances, several methods can be employed to address the endogeneity issue and estimate this model effectively such as fixed-effects-within estimation and first differences.

In panel data, Wooldridge (2002) fixed effect estimator is also called within estimator. This model eliminates the individual-specific error component by subtracting individual-specific time means from each observation. By stacking the data per individual and using the difference from the means matrix operator $Q = I_T - e_T e_T$ the following fixed-effects model is obtained.

$Q_{yi} = Qx_i\beta_+ Qv_i$ .....(6.10)

$i = 1,\ldots,N$

where Q is (T x T), γ_I , V_t are $(T\ x\ 1)$ and $x_i\ is\ (T\ x\ k_1)$. Let us μ_i = Qv_i. From (2), the variance-covariance matrix of the time-demeaned error is:

$$\Omega^{FE} = \begin{bmatrix} \Omega_1^{FE} & 0 & \cdots & 0 \\ 0 & \ddots & & \vdots \\ \vdots & & & 0 \\ & & \ddots & \\ 0 & \cdots & 0 & \Omega_N^{FE} \end{bmatrix}$$

where

$$\Omega^{FE} = \begin{bmatrix} \frac{(T-2)}{T}\sigma_{V_{i,1}}^2 + \frac{1}{T^2}\sum_{t=1}^{T}\sigma_{v_{it}}^2 & \cdots & -\frac{\sigma_{v_{i,T}}^2}{T} - \frac{\sigma_{v_{i,1}}^2}{T} + \frac{1}{T^2}\sum_{t=1}^{T}\sigma_{v_{it}}^2 \\ & \ddots & \\ \vdots & & \\ & \ddots & \\ -\frac{\sigma_{v_{i,1}}^2}{T} - \frac{\sigma_{v_{i,T}}^2}{T} + \frac{1}{T^2}\sum_{t=1}^{T}\sigma_{v_{it}}^2 & \cdots & \frac{T-2}{T} + \sigma_{v_{i,T}}^2 + \frac{1}{T^2}\sum_{t=1}^{T}\sigma_{v_{it}}^2 \end{bmatrix}$$

where

$$\mathrm{E}(\mu_{it,\mu_{i,t-1}x_{i,t}}) = E\left[(v_{i,t} - \frac{1}{T}\sum_{t=1}^{T} v_{i,t})(v_{i,t-1} - \frac{1}{T}\sum_{t=1}^{T} v_{i,t})\, x_{i,t}\right] = -\frac{\sigma_{v_{i,t}}^2}{T} - \frac{\sigma_{v_{i,t-1}}^2}{T} + \frac{1}{T^2}\sum_{t=1}^{T}\sigma_{v_{it}}^2 \quad \text{.....(6.11)}$$

and

$$\lim_{T\to\infty} E\left(u_{it,}u_{i,t-1}x_{i,t}\right) = 0. \quad \text{.....(6.12)}$$

Therefore, Ω_i^{FE} will not be diagonal unless T< ∞, implying time demeaning introduces serial correlation holding N fixed. Hence, the introduction of heteroskedasticity adds an extra layer of efficiency loss beyond the inherent one already characterised by this model—namely, the loss introduced by serial correlation.

The current study adopted a fixed effects approach due to its large T (29 years) and a small N (4 companies). A simplified fixed effect equation utilised is as follows:

$Y_{it} = X_{it}\beta + \pi_i + \mu_{it}$.....(6.13)

Here the intercept is absent, Y_{it} is the vector of overall factor return on capital employed (ROCE) across the listed food retail companies in the SADC region, the unobserved listed food retail companies-particular effect is, β represents a vector that estimates the parameters corresponding to each of the explanatory variables. π_I represents disturbances (fixed effects) and μ_{it} denotes a time-varying idiosyncratic shock. Y_{it} represents the overall return on assets across firms. The unobserved firm-specific effect is captured by β, which serves as a vector for estimating parameters related to each explanatory variable. The constant X_{it} is s a K-dimensional row vector encompassing explanatory variables such as CPI, IR, ER, and GDP.

In equation 6.14, D_j epitomises the dummy variables for the N-1 cross-section of listed food retail companies under investigation. For the study's LSDV equation, the following holds:

$Y_{\boldsymbol{it}} = \Sigma_j^4{}_{=2}\, D_j + X_{it}\beta + \pi_i + \mu_{it}$.....(6.14)

The insertion of this dummy variable distinguishes the ADF regression equation from the original equation. Nevertheless, a multicollinearity issue is predicted if the dummy variables seem too big which can ultimately lead to difficulties where regressors are correlated; this may perhaps yield an uneven and biased estimator (Nerlove and Balestra, 1996a).

6.4.2 Random effects

The random effects model presumes that individual-specific effects, also known as unobserved heterogeneity, are randomly disseminated and uncorrelated with the explanatory variables (Borenstein et al., 2010). The general form of the random effects model is:

$y_{it} = \beta_0 + \beta_{1x_{it1}} + \beta_{2x_{it2}} + \cdots + \beta_{kx_{itk}} + \mu_i + \epsilon_{it}$.....(6.15)

where:

y_{it} is the dependent variable for individual i at time t.
$x_{it1}, x_{it2}, \ldots, x_{itk}$ re the explanatory variables for individual i at t
$\beta_0, \beta_1, \beta_2, \ldots \beta_k$ are the coefficients to be estimated.
μ_i is the individual-specific random effect (time-invariant).
ϵ_{it} it is the idiosyncratic error term (time-variant).

Assumptions of the model (Raudenbush, 1994):

- The individual-specific effects (μ_i) are uncorrelated with the explanatory variables (x_{it}).
- The idiosyncratic errors (ϵ_{it}) are uncorrelated across individuals and time.
- The error terms have constant variance also known as homoskedasticity.

The random effect estimator (Between-Estimator) is written as:

$$\hat{\beta}_{RE} = (\Sigma_{it}(X_{it} - \hat{\eta}\bar{X}_t)(X_{it} - \hat{\eta}\bar{X}_t)^{-1}(\Sigma_{it}(X_{it} - \hat{\eta}\bar{X}_t)(X_{it} - \hat{\eta}\bar{X}_t)(Y_{it} - \hat{\eta}\bar{X}_t)) \ldots\ldots\ldots\ldots (6.16)$$

$$\hat{\eta}=1-\sqrt{1/\left[1+n\left(\hat{\sigma}_u^2/\hat{\sigma}_e^2\right)\right]} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6.17)$$

In this regard, $\hat{\beta}_{FE} - \hat{\beta}_{RE}$ when $\hat{\eta}$ = 1 and n is the number of cross sections. Always, $\hat{\eta} \neq 1$ and this necessitates the Hausman test to compare the weighted squares of fixed effects and random effects (Olarewaju, 2018).

This research involved estimating both fixed and random effects models. The pooled ordinary least squares regression assumes uniform coefficients and intercepts across all food retail companies listed in the SADC region. On the other hand, the fixed effects model permits the intercept to differ among companies to account for unobserved factors, whereas the random effects model assumes that the intercept is randomly correlated with the error term. Consequently, in the random effects model, the company's intercept is considered a deviation from the known sample mean.

To determine the most appropriate model for making recommendations, we conducted the Hausman test. This test evaluates fixed and random effects models by testing the null hypothesis, which states that there is no meaningful difference between the two models. The comparison relies on an asymptotic chi-square distribution. The results of the Hausman test guide us in selecting the best estimation method for the static regression analysis (Olarewaju, 2018).

To conducted the Hausman test results;

$\hat{\beta}_{RE} = \frac{\Sigma XY}{\Sigma X^2} = \beta + \frac{\Sigma uX}{\Sigma X^2}$.....(6.18)

$Var(\hat{\beta}_{RE}) = \sigma^2 \frac{\Sigma X^2}{(\Sigma X^2)^2} = \frac{\sigma^2}{\Sigma X^2}$.....(6.19)

When $\hat{\beta}_{RE}$ is not prejudiced, $\frac{\Sigma uX}{\Sigma X^2} = 0$.

$\hat{\beta}_{RE} = \frac{\Sigma RY}{\Sigma R^2} = \beta + \frac{\Sigma uR}{\Sigma XR}$.....(6.20)

$Var(\hat{\beta}_{FE}) = \sigma^2 \frac{\Sigma R^2}{(\Sigma XR^2)^2}$.....(6.21)

$\hat{p} = \hat{\beta}_{FE} - \hat{\beta}_{RE}$

therefore,

$Var(\hat{\beta}_{FE}) - Var(\hat{\beta}_{RE}) = \sigma^2 \frac{\Sigma R^2}{(\Sigma XR)} - \frac{\sigma^2}{\Sigma X^2} = \frac{V^2}{\Sigma X^2}\left[\frac{\Sigma R^2 \Sigma X^2}{(\Sigma XR)^2} - 1\right]$.....(6.22)

If the correlation coefficient is W_{XR}, then $W_{XR} = \sqrt{\frac{(\Sigma XR)^2}{\Sigma R^2 \Sigma X^2}}$;

$Var(\hat{\beta}_{RE}) - Var(\hat{\beta}_{FE}) = \frac{V^2}{\Sigma X^2}\left(\frac{1}{W_{XR}^2} - 1\right)$.....(6.23)

then the Hausman test statistic is $G = \frac{(\hat{\beta}_{FE} - \hat{\beta}_{RE})^2}{Var(\hat{\beta}_{RE}) - Var(\hat{\beta}_{FE})}$

To write this in a matrix form;

$$x_2 = \left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)[Var(\beta_{FE})^{-1}(Var(\beta_{RE})^{-1})]\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right) \text{.....(6.24)}$$

To select between the fixed effect model and random effect model, the Hausman (1978) test is performed in this study (Mutl and Pfaffermayr, 2011).

Moreover, the PCSEs and FGLS model correct for potential cross-sectional dependence in the errors. This is common in macroeconomic and financial data where companies may be influenced by common factors not accounted for in the model (Reed and Webb, 2010). Therefore, the following section discusses the PCSEs and FGLS models.

6.4.3 PCSEs Model

In panel data analysis, the PCSEs model is a technique that helps with contemporaneous correlation across panels and heteroskedasticity. The PCSEs approach, which was created in 1995 by Nathaniel Beck and Jonathan N. Katz, is especially helpful for handling time-series cross-sectional (TSCS) data since errors in these types of data are frequently contemporaneously correlated and heteroskedastic across many panels or units. Heteroskedasticity (variations in error variances between units or over time) and contemporaneous correlation (correlation of mistakes across units at the same point in time) are two common problems with panel data. In the context of these problems, traditional estimating methods like ordinary least squares (OLS) may yield biased or inaccurate standard errors. To produce statistical conclusions that are more trustworthy, the PCSE approach corrects standard errors. It is a reliable technique for empirical analysis since it enables consistent parameter to estimate in the presence of contemporaneous correlation and panel-specific heteroskedasticity (Beck and Katz, 1995, Plümper and Troeger, 2007). Ikpesu et al. (2019) PCSE is suitable for a panel data structure where the number of cross-sections is less than the time dimensions.

The baseline model:

$$\gamma_{it} = X_{it}\beta + \mu_{it} \text{ .....(6.25)}$$

where X_{it} is the dependent variable, X_{it} is a vector of independent variables, α\alphaα is the intercept, β is the vector of coefficients and μ_{it} is the error term for unit iii at time t.

6.4.4 FGLS Model

An improvement on the GLS technique, the FGLS, is used to solve heteroskedasticity and autocorrelation problems in regression models. OLS estimates are unbiased but no longer efficient when the assumptions of homoskedasticity (constant variance of errors) and no autocorrelation (errors are not correlated across observations) are broken. This means that OLS estimates do not have the lowest variance among all linear unbiased estimators. By adapting the model to take these problems into account, FGLS offers a means of obtaining parameter estimates that are more accurate and efficient. It is suitable for panel structure where the cross-sections are less than the time dimensions.

The baseline model:

$$y = X\beta + \epsilon y \quad \text{.....(6.26)}$$

where y is the dependent variable, X is the matrix of independent variables, β is the vector of coefficients and ϵ is the vector of error terms.

6.4.5 Model specification

Objective one: Investigate the effect of the macroeconomic factors on the financial health of the listed food retail companies in the SADC region

The macroeconomic factors are CPI, IR, ER and GDP.

To test this objective, the study used the linear regression model:

$$ROCE_{it} = \alpha + \beta_1 CPI_{it} + \beta_2 IR_{it} + \beta_3 ER_{it} + \beta_4 GDP_{it} + \pi_i + \mu_{it} \quad \text{.....(6.27)}$$

π_i represents disturbances and μ_{it} represents time varying idiosyncratic shock. Y_{it} is the vector of overall factor across the firms, the unobserved firms' specific effect is, β is a vector of estimating parameter for each of the explanatory variables while constant X_{it} is K-dimensional row vector of explanatory variables.

Objective two: Analyse the effect of the internal factors on the financial health of the listed food retail companies in the SADC region

The internal factors are QR, ROA, CR, LEV, ATR and ST.

To test this objective, the study used the following model:

$$ROCE_{it} = \alpha + \beta_1 QR_{it} + \beta_2 ROA_{it} + \beta_3 CR_{it} + \beta_4 LEV_{it} + \beta_5 ATR_{it} + \beta_6 ST_{it} + \pi_i + \mu_{it} \quad \text{.....(6.28)}$$

Objective three: Investigate the effect of the industry-specific factors on the financial health of the listed food retail companies in the SADC region

The industry-specific factors are Firm size (Size), Firm age (Age), Company competitiveness (CC), Human capital (HC), Marketing strategy (MS), Governance (G) and Social responsibility (SR).

The model for the objective is as follows:

$$ROCE_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 AGE_{it} + \beta_3 CC_{it} + \beta_4 HC_{it} + \beta_5 MS_{it} + \beta_6 G_{it} + \beta_7 SR_{it} + \pi_i + \mu_{it} \quad \text{.....(6.29)}$$

6.5 STATISTICAL TESTS

6.5.1 The Breusch-Pagan

For the Breusch-Pagan LM test, the specification of the second-stage artificial regression is as follows:

$$\frac{\hat{u}_{it}^2}{\sigma^2} = h(Z_{it}\gamma) + \varepsilon_{it} \quad \text{.....(6.30)}$$

where γ is a (k_2 x 1) vector of parameters, ε_{it} is $i.i.d.\ N(0, \sigma_\varepsilon^2)$, Z_i is a (T x k_2) matrix of independent variables as well as a constant. Note that the second-stage regression is not specified as

([2]Note that for the fixed-effects model the squared residuals will be:

$\sigma_{it}^2 = (v_{it} - \bar{v}_i)^2$ where $\bar{v}_i = \frac{1}{T}\sum_{t-1}^{T} v_{it}$, while for the first differences model the squared residuals will be: $\hat{u}_{it}^2 = \left(v_{i,t} - v_{i,t-1}\right)^2$.)

an error components model, as by design, the variance of the residual error term lacks an individual-specific component.

Breusch and Pagan (1979) demonstrated that once $\hat{y}$ is obtained from estimating modified DF equation, the LM statistic is equivalent to $\frac{ESS}{2}$, where ESS represents the explained sum of squares of the estimation of modified DF equation. The statistic derived from the second-stage artificial regression follows a chi-squared distribution with k_2 degrees of freedom. Accordingly, if the LM test statistics exceeds the critical value of the chi-squared distribution under k_2 degrees of freedom, we reject the null hypothesis and infer the presence of heteroskedasticity.

The Breusch-Pagan test is employed to examine heteroskedasticity within the framework of the fixed-effects model. The estimation process involves two stages. Firstly, Breusch-Pagan LM equation for the fixed-effects model and the panel-specific AR test statistics equation for the first differences model were estimated using least squares and the squared residuals were obtained. Also, from the regression conducted in the first stage, we obtained the estimate of the variance under the null hypothesis:

$$\hat{\sigma}^2 = \frac{1}{N(T-1)-k_1}\sum_{i=1}^{N}.\sum_{t=1}^{N}\hat{u}_{it}^2 \quad \text{.....(6.31)}$$

In summary, the next step involves estimating the artificial regression outlined below:

$$\hat{u}_{it}^2 = \sigma_v^2 h\left(Z_{it}'\gamma\right) + \varepsilon_{it} \quad \text{.....(6.32)}$$

where γ is a (k_2x 1) vector of parameters, ε_{it} is $i.i.d.\ N(0, \sigma_\varepsilon^2)$, Z_i is a $(T$ x $k_2)$ matrix of independent variables encompasses those outlined in the Breusch-Pagan LM equation. Hence, the hypotheses of the analysed tests can be specified as follows:

$$H_o \rightarrow \gamma = 0 \qquad \Rightarrow \qquad H_o \rightarrow \sigma_{it}^2 = \sigma_v^2$$
$$H_o \rightarrow \gamma \neq 0 \qquad \Rightarrow \qquad H_a \rightarrow \sigma_{it}^2 = \sigma_v^2$$

where $\gamma = 0$ indicates the error is homoscedastic.

While fixed effects control for time-invariant unobserved heterogeneity, they do not address issues related to the structure of the error terms.

Furthermore, we explore the random effect model proposed by Nerlove and Balestra (1996b), designed to address the issue of omitted variables commonly encountered in the fixed effect model. The random effect model equation is presented as:

$$y_{it} = \alpha + X_{it}\beta + \pi_i + \mu_{it} \quad \text{.....(6.33)}$$

where y_{it} represents firms' investment inefficiency; α is the constant; X_{it} is the explanatory variables; β is the parameters for the independent variables; π_i is the within-firm error and μ_{it} is the between-firm error. In estimating random effect, it is assumed that π_i is random and correlated with the independent variables.

6.5.2 Wooldridge test for autocorrelation in panel data

The Wooldridge test for autocorrelation is applied to identify first order successive relationship within the idiosyncratic errors of a panel data model (Drukker, 2003).

The linear one way model is,

$$\gamma_{it} = \alpha + X_{it}\beta_1 + Z_i\beta_2 + \mu_i + \epsilon_{it} \quad \text{.....(6.34)}$$
$$i \in \{1,2,\cdots,N\}, \qquad t \in \{1,2,\cdots,T_i\}$$

where γ_{it} is the dependent variable; X_{it} is a (1 x K_1) vector of time-varying covariates; Z_i is a (1 x K_2) vector of time invariant covariates; $\alpha, \beta_1 \; and \; \beta_2$ are 1 + $K_1 + K_2$ parameters; μ_i is the individual-level effect; and ϵ_{it} is the idiosyncratic error. If the μ_i are linked with the X_{it} or the Z_i, the coefficients on the time-varying covariates X_{it} regression on the within-transformed data. If the μ_i are separate with the X_{it} and the Z_i, the coefficients on the time-varying and time-invariant covariates can be perfectly projected using the FGLS or PCSEs methods normally preferred to address issues in regression analysis.

Wooldridge's approach involves utilizing the residuals obtained from a regression performed on the first differenced data. It is important to note that by applying first-differencing to the model, the individual level effect, along with the component related to time invariant covariates and the constant, is eliminated.

$$Y_{it} - Y_{it-1} = (X_{it} - X_{it-1})\beta_1 + \epsilon_{it} - \epsilon_{it-1} \quad \text{.....(6.35)}$$
$$\Delta y_{it} = \Delta X_{it}\beta_1 + \Delta\epsilon_{it}$$

where Δ is the initial-variance operator.

Wooldridge's method starts by estimating the parameters β_1 through a regression of Δy_{it} on ΔX_{it}, followed by calculating the residuals $\hat{e}_{it}$. A key insight from Wooldridge is that if ϵ_{it} lacks serial correlation, then Corr $(\Delta\epsilon_{it}, \Delta\epsilon_{it-1}) = -.5$. Based on this, the method involves regressing the residuals $\hat{e}_{it}$ obtained from the first-differenced regression on their lagged values and testing whether the coefficient on the lagged residuals equals −.5. To account for within-panel correlation in the regression of $\hat{e}_{it}$ on $\hat{e}_{it-1}$, the variance-covariance matrix is adjusted for clustering at the panel level. Since clustering inherently implies robustness, this test also accommodates conditional heteroskedasticity.

6.5.3 Panels cointegration test

According to Uddin et al. (2014), the cointegration test assesses significant deviations of integrated variables from a specific relationship. In this study, cointegration will indicate a long-term association among economic variables, allowing for the adjustment of short-term fluctuations over time, it becomes essential to test for a long-term relationship between variables, especially when unit root test results indicate that the variables share the same order of integration.

In the present study, the Pedroni (2004), Kao (1999) ADF regression and Westerlund (2005) tests of cointegration on a panel dataset will be used. The cointegrating regression model might account for panel-specific means and time trends, with the tests operating under a common null hypothesis of no cointegration. According to the alternative hypothesis for both the Kao and Pedroni tests, the variables are presumed to be cointegrated across all panels. The two versions of the Westerlund tests which this study will use assume, in the alternative hypothesis, that the variables are cointegrated in some or all panels.

The panels cointegration tests use the following model:

$$\gamma_{it} = X'_{it}\beta_i + z'_{it}\gamma_i + e_{it} \quad \text{.....(6.36)}$$

6.5.4 Kao tests

Therefore, Kao (1999) proposes that in panel cointegration tests, the cointegrating vector β_i is assumed to be uniform across panels, indicating a common slope coefficient for all panels. Consequently, a unified long-run covariance matrix is represented as Ω = Σ + $\Gamma' + \Gamma$. The regression model is:

$$\gamma_{it} = \gamma_i + X'_{it}\beta + e_{it} \quad \text{.....(6.37)}$$

Here, γ_i represents the panel-specific fixed effects, while β denotes the common cointegrating vector across panels. Kao (1999) suggests five test statistics for assessing cointegration. These include the DF t, the modified DF t, the unadjusted DF t and the unadjusted modified DF t, all of which are derived from the DF regression.

$$\hat{e}_{it} = p\hat{e}_{i,t-1} + v_{it} \text{.....(6.38)}$$

where ρ denotes the combined autoregressive parameter for the forecastable residuals. The test statistics are derived from the DF regressions based on this parameter.

$$DF\ t = \frac{t_\rho + \frac{\sqrt{6N}\hat{\sigma}_v}{2\hat{w}_v}}{\sqrt{\frac{w_v^2}{2\hat{\sigma}_v^2} + \frac{3\hat{\sigma}_v^2}{10\hat{w}_v^2}}} \text{.....(6.39)}$$

$$\text{modified DF } t = \frac{\sqrt{N}T(\hat{p}-1) + \frac{3\sqrt{N}\hat{\sigma}_v^2}{w_v^2}}{\sqrt{3 + \frac{36\hat{\sigma}_v^4}{5\hat{w}_v^4}}} \text{.....(6.40)}$$

where $\hat{p}$ is the projected value of $\rho.\hat{\sigma}_v^2$ and $\hat{w}_v^2$ are scalar terms that are constant estimates of $\sigma_v^2 = \sigma_v^2 - \Sigma'_{u\epsilon}\Sigma_\epsilon\Sigma_{u\epsilon} and\ w_v^2 = w_u^2 - \Omega'_{u\epsilon}\Omega_\epsilon\Omega_{u\epsilon}.$ t_ρ is the t statistic for assessing the null hypothesis $H_0: \rho = 1$.

The DF test statistics, which assume strict exogeneity and no serial correlation, are specified as follows:

$$\text{unadjusted DF } t = \sqrt{\frac{5t_\rho}{4} + \sqrt{\frac{15N}{8}}} \text{.....(6.41)}$$

$$\text{Unadjusted modified DF } t = \frac{\sqrt{N}T(\hat{p}-1) + 3\sqrt{N}}{\sqrt{\frac{51}{5}}} \text{.....(6.42)}$$

The ADF regression is given by:

$$\hat{e}_{it} = \rho\hat{e}_{i,t-1} + \sum_{j=1}^{p}\rho j\Delta_{\hat{e}_{i,t-j}} + v_{it}^* \text{.....(6.43)}$$

where p represents the cumulative sum of lagged difference terms.

The test statistics are derived from the ADF regression data as follows:

$$DF\ t = \frac{t_{\mathrm{ADF}} + \frac{\sqrt{6N}\hat{\sigma}_v}{2\hat{w}_v}}{\sqrt{\frac{w_v^2}{2\hat{\sigma}_v^2} + \frac{3\hat{\sigma}_v^2}{10\hat{w}_v^2}}} \quad \text{.....(6.44)}$$

where

$$t_{\mathrm{ADF}} = \frac{\hat{\rho}}{\widehat{SE}(\hat{\rho})} \quad \text{.....(6.45)}$$

is calculated from the ADF regression.

The asymptotic distribution of all test statistics converge to $N(0,1)$.

6.5.5 Pedroni tests

According to Pedroni (1999) in the Kao tests framework, a panel-specific cointegrating vector incorporates unique slope coefficients for each panel. To conduct panel cointegration tests, one examines unit roots in the residuals obtained from the ADF regression equation, applying panel-specific ρi values rather than a single ρ. Alternatively, tests may use PP regressions as outlined by Pedroni (1999).

Pedroni (2004) develops test statistics based on a model where the AR parameter may be either unique to each panel or uniform across all panels. Author refers to the test statistics with panel-specific AR parameters as group-mean statistics' and those with a common AR parameter as 'panel cointegration statistics.

The panel-specific AR test statistics are:

$$\text{Modified PP } t = TN^{-1/2} \sum_{i=1}^{N} \left(\sum_{t=1}^{T} \hat{e}_{i,t-1}^2 \right)^{-1} \sum_{t=1}^{T} (\hat{e}_{i,t-1} \Delta \hat{e}_{i,t} - \hat{\lambda}_i) \quad \text{.....(6.46)}$$

$$\text{PP } t = N^{-1/2} \sum_{i=1}^{N} \left(\widehat{\sigma}_i^2 \sum_{t=1}^{T} \widehat{e}_{i,t-1}^2 \right)^{-1/2} \sum_{t=1}^{T} (\widehat{e}_{i,t-1} \Delta \widehat{e}_{i,t} - \widehat{\lambda}_i) \quad \text{.....(6.47)}$$

$$\text{ADF } t = N^{-1/2} \sum_{i=1}^{N} \left(\sum_{t=1}^{T} \widehat{s}_i^{*2} \widehat{e}_{i,t-1}^2 \right)^{-1/2} \sum_{t=1}^{T} \widehat{e}_{i,t-1} \Delta \widehat{e}_{i,t} \quad \text{.....(6.48)}$$

The residuals from the panel data regression model in the Kao tests equation are denoted by $\hat{e}_{it}$; they are calculated as follows.

$$\hat{\lambda}_i = \frac{1}{2}\left(\hat{\sigma}_i^2 - \hat{S}_i^2\right) \text{.....(6.49)}$$

where $\hat{S}_i^2$ and $\hat{\sigma}_i^2$ are the separate coexistent and long run variances of the residuals from the DF regression from:

$$\hat{e}_{it} = \rho_i \hat{e}_{i,t-1} + v_{it} \text{ .....(6.50)}$$

In the PPt test statistics, variations are obtained by applying the ADF regression model via OLS to derive the estimated residuals ($\hat{e}_{it}$). The DF regression model is then applied to these residuals for the PP t tests.

For panel-specific AR test statistics $\hat{s}_i^{*2}$ represents the variance of residuals from the ADF regression, calculated separately for each panel with a panel-specific ρi rather than a common ρ.

The same-AR test statistics are:

$$\text{Modified VR } = T^2 N^{3/2} \left(\sum_{i=1}^{N} \sum_{t=1}^{T} \widehat{L}_{11i}^{-2} \widehat{e}_{i,t-1}^2 \right)^{-1} \text{.....(6.51)}$$

$$\text{Modified PP } t = T\sqrt{N}\left(\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}\widehat{e}_{i,t-1}^{2}\right)^{-1}\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}(\widehat{e}_{i,t-1}\Delta\widehat{e}_{i,t}-\widehat{\lambda}_i)$$

……..…(6.52)

$$\text{PP } t = \left(\widetilde{\sigma}_{N,T}^{2}\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}\widehat{e}_{i,t-1}^{2}\right)^{-1/2}\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}(\widehat{e}_{i,t-1}\Delta\widehat{e}_{i,t}-\widehat{\lambda}_i)$$

……(6.53)

$$\text{ADF } t = \left(\widetilde{s}_{N,T}^{*2}\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}\widehat{e}_{i,t-1}^{2}\right)^{-1/2}\sum_{i=1}^{N}\sum_{t=1}^{T}\widehat{L}_{11i}^{-2}\widehat{e}_{i,t-1}\Delta\widehat{e}_{i,t}$$

……..……(6.54)

where the residuals are as aforesaid and where

$\hat{\sigma}_{N,T}^{2} = \frac{1}{N}\sum_{i=1}^{N}\hat{L}_{11i}^{-2}\hat{\sigma}_{i}^{2}$ ……..(6.55)

$\hat{L}_{11i} = \hat{w}_{u,i}^{2} - \hat{\Omega}_{u\epsilon,i}\hat{\Omega}'_{u\epsilon,i}$……..(6.56)

and

$\tilde{s}_{N,T}^{*2} = \frac{1}{N}\sum_{i=1}^{N}\hat{S}_{i}^{*2}$……..……(6.57)

The asymptotic distribution of all test statistics converges to after appropriate correction to $N(0,1)$. The modification is made by

$\frac{x-\mu\sqrt{N}}{\sqrt{v}}$ ……..(6.58)

For any of the test statistics provided above, χ represents the test statistic, while the parameters μ and v denote the mean and variance of the test statistic derived through simulation.

6.5.6 Westerlund tests

In Westerlund (2005), it is assumed that each panel has its own cointegrating vector, as indicated in the ADF equation, where different slope coefficients are assigned to each panel. The VR test statistics are calculated by examining unit roots in the residuals predicted by the DF regression equation.

The null hypothesis of no cointegration is assessed against the alternative hypothesis that all panels share a common cointegrating relationship, using the same-AR test statistic.

The panel-specific AR test statistic is expressed as follows:

$$\text{VR} = \sum_{i=1}^{N} \sum_{t=1}^{T} \widehat{E}_{it}^{2} \widehat{R}_{i}^{-1} \quad \text{.....(6.59)}$$

Identical AR test statistic is offered by:

$$\text{VR} = \sum_{i=1}^{N} \sum_{t=1}^{T} \widehat{E}_{it}^{2} \left(\sum_{i=1}^{N} \widehat{R}_{i} \right)^{-1} \quad \text{.....(6.60)}$$

where $\hat{E}_{it} = \sum_{j=1}^{t} \hat{e}_{ij}, \hat{R}_i = \sum_{t=1}^{T} \hat{e}_{it}^2$, and $\hat{e}_{it}$ are the residuals from the ADF panel data regression model. Following appropriate standardisation, the asymptotic distribution of all test statistics converges to $N(0,1)$.

Random effects were not deemed applicable in this study as there were no additional companies beyond the sample (Nerlove and Balestra, 1996a), only companies within the specified population were considered and results were projected accordingly.

6.5.7 Autocorrelation test

Autocorrelation analysis assesses the relationships among observations across different points in time, aiming to identify patterns or trends within a time series. In this study, the autocorrelation test was performed to examine the connections between variables.

6.5.8 Durbin–Watson test for panel data

In this study, the Durbin-Watson statistic was employed. This measure evaluates whether there is a connection between values separated by a particular time lag in the residuals from regression analysis. Bhargava et al. (1982) expanded on this concept by developing a generalized version for panel data.

If $e_{i,t}$ represents the residuals from an OLS regression with fixed effects for each panel i, corresponding to the observation at time t within panel i, then the test statistic is formulated as follows.

$$d_{pd} = \frac{\sum_{i=1}^{N}\sum_{t=2}^{T}(e_{i,t}-e_{i,t-1})^2}{\sum_{i=1}^{N}\sum_{t=1}^{T}e_{i,t}^2} \quad \text{.....(6.61)}$$

The Durbin-Watson statistic, ranging from 0 to 4, is used to assess the null hypothesis of a unit root contrary to fixed alternatives in static models. Tables V and VI, tabulated by Bhargava et al. (1982), provide the set of bounds for this test. A Durbin-Watson value near 2 indicates no significant autocorrelation in the model's residuals.

6.5.9 Heteroskedasticity-robust standard errors (PCSEs)

Heteroskedasticity denoted a scenario in which the variance of the residuals differs across a range of measured values. When heteroskedasticity is present, the population utilised in the regression exhibits uneven variance, potentially rendering the analysis results invalid (Rigobon, 2003). Over and above the Breusch-pagan test explained earlier, the current study also applied the heteroskedasticity procedure by Beck and Katz (1995) to compute PCSEs.

A simplified overview of the heteroskedasticity procedure to compute PCSEs for the fixed effects panel regression model is:

$$\gamma_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \cdots + \beta_k x_{kit} + \alpha_i + \mu_{it} \text{.....(6.62)}$$

where:

- γ_{it} is the dependent variable for observation i at time t.

- x_{1it}, x_{2it}, …, x_{kit} are the independent variables.
- α_i represents individual-specific effects.
- μ_{it} is the error term.

To calculate the adjusted residuals $\tilde{u}_{it}$ or each cross-sectional unit, the study applied the methodology developed by Beck and Katz (1995):

$$\tilde{u}_{it} = \frac{\hat{u}_{it}}{\sqrt{\hat{a}_i(1-\hat{a}_i}} \text{.......................................(6.63)}$$

where

$\hat{u}_{it}$ represents the residuals.

$\hat{a}_i$ represents the estimated individual-specific effect for cross-sectional unit i.

6.5.10 Cross-sectional dependence (CD)

Developed by De Hoyos and Sarafidis (2007), the CD model was used in the study to test the null hypothesis of no cross-sectional dependence versus the alternative hypothesis that cross-sectional dependence exists.

The test statistic for the Pesaran CD test is given by:

$$CD = \frac{T}{N(N-1)} \Sigma_{i=1}^{N} \Sigma_{i=1,j\neq i}^{N} \rho_{ij} \text{..........................(6.64)}$$

where:

T is the sum of time periods,
N is the sum of cross-sectional units,
ρ_{ij} is the pairwise association between the residuals of units i and j.
If CD is significantly different from zero, it indicates the presence of cross-sectional dependence.

6.5.11 Panel unit root test

The concept of unit root has been widely studied in most studies. This stresses the necessity for conducting unit root tests in the current study. Tests conducted by Moon et al. (2007) and Im et al. (2003) indicate that, under the null hypothesis, all panels have a unit root. The experimental findings reveal that no unit root tests are completely free from power and size limitations. Consequently, to obtain dependable evidence about the order of integration, the Im-Pesaran-Shin test was performed.

Panel unit root has a common structure as follows:

$$\Delta m_{it}=\rho_i m_{i(t-1)}+\sum_{j=1}^{pj} \emptyset i\, \Delta m_{i(t-1)}+a_i n_{it}+\varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(6.65)$$

where, n_{it} deterministic components.

While the null hypothesis ($\rho_i = 0$) implies that *m* process has a unit root for each cross-section i, the substitute hypothesis $\rho_i < 0$ indicates that the process is stationary around the deterministic fraction.

6.5.12 Im–Pesaran–Shin test

The study employed the Im-Pesaran-Shin approach, which includes time trends and adjusts for cross-sectional means, to assess the stationarity of variables like ROCE, CPI, IR, ER, and GDP in relation to objective 1. According to Im et al. (2003), the use of this method is appropriate due to its applicability in both time series and panel data analysis, as well as its capacity to accommodate large sample sizes.

$$\Delta y_{it}= \emptyset_i y_{i,t-1} + z'_{it}\, \gamma_{it}+ \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(6.66)$$

In the equation, Δy_{it} represents the first difference of the variable y for individual i at time t. Taking this initial difference is a common technique to remove trends and achieve stationarity if the series exhibits a unit root. $\emptyset_i y_{i,t-1}$ refers to the lagged value of y for individual i at time $t-1$, multiplied by a coefficient $\emptyset_i$ which accounts for the persistence of the variable over time. The term $z'_{it}\ \gamma_i$ represents a set of exogenous variables for individual z' for individual i at time t, rearranged and multiplied by a

coefficient vector γ_i. These exogenous variables can include additional factors influencing the variable y and are specific to each individual. ε_{it} represents the error term for distinct i at time t and captures the omitted variables not addressed by the other components of the model. Im, Pesaran and Shin assume that ε_{it} is independently normally distributed for all i and t, with potentially varying variances $\sigma\, i_i^2$ throughout panels (Oke et al., 2019).

6.5.12.1 First differences estimation

The first differences model mitigates endogeneity arising from the correlation of the individual-specific error component and exogenous variables. This is achieved by subtracting the previous period's observation from each current period observation. Therefore, after taking first differences and stacking the data by individual, the model transforms to:

$$\Delta_{\gamma_i} = \Delta x_i \beta + \Delta v_i \quad \text{.....(6.67)}$$

$$i = 1, \dots, N$$

Where Δ_{γ_i} and Δv_i are $((T-1)$ x $1)$ and Δx_i is $((T-1)$ x $k_1)$. Let $\mu_i = \Delta v_i$. From the model, the variance – covariance matrix of the first differenced error is:

$$\Omega^{FD} = \begin{bmatrix} \Omega_1^{FD} & 0 & \cdots & 0 \\ 0 & \ddots & & \vdots \\ \vdots & & & 0 \\ & & \ddots & \\ 0 & \cdots & 0 & \Omega_N^{FD} \end{bmatrix}$$

where

$$\Omega_i^{FD} = \begin{bmatrix} \sigma_{i,t}^2 + \sigma_{i,2}^2 & -\sigma_{i,1}^2 & 0 & \cdots & 0 \\ -\sigma_{i,1}^2 & \ddots & & & \vdots \\ 0 & & \ddots & & 0 \\ \vdots & & & \ddots & \sigma_{i,T-1}^2 \\ 0 & \cdots & 0 & -\sigma_{i,T-1}^2 & \sigma_{i,T-1}^2 + \sigma_{iT}^2 \end{bmatrix}$$

where

$E(\mu_{it,}\mu_{i,t-1}x_{i,t}) = E[(v_{i,t} - v_{i,t-1})(v_{i,t-1} - v_{i,t-2})x_{i,t}] = -\sigma_{v_{i,t-1}}^2$ and

$\frac{lim}{T\to\infty} E(\mu_{it,}\mu_{i,t-1} | x_{i,t}] \neq 0,$ ……..(6.68)

therefore, Ω_i^{FD} is tri-diagonal.

Both the fixed-effects within estimator and the first-differences estimator are consistent, yet their efficiency properties diverge depending on assumptions about the remainder error term. Assuming v has no serial correlation, the fixed effects within estimator will show greater efficiency. However, if v is not serially correlated, both models experience efficiency loss due to the introduction of serial correlation via differencing or time demeaning.

The fixed effects model achieve efficiency with a large T, while the size of T has no impact on the efficiency of the first differences estimator. When there is reason to believe v follows a random walk, the first differences estimator becomes more efficient (Wooldridge, 2002).

As all statistics have been discussed earlier, each of the objectives applied the following statistical methods.

Study objective 1: Determine the effect of the macroeconomic factors on the financial health of listed food retail companies in the SADC region

- Descriptive statistics

- Pairwise correlations
- Fixed effects
- Random effect
- Hausman test results
- Cross-section dependence test
- Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
- Wooldridge test for autocorrelation in panel data
- Unit-root test
- Pedroni test for cointegration
- FGLS

Study objective **2:** Analyse the effect of the internal factors on the financial health of the listed food retail companies in the SADC region

- Descriptive statistics
- Pairwise correlations
- Fixed effects
- Random effects
- Hausman test results
- Unit-root test
- Westerlund test for cointegration
- Wooldridge test for autocorrelation in panel data
- Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
- Correlated panels corrected standard errors (PCSEs)

Study objective 3: Investigate the effect of the industry-specific factors on the financial health of the listed food retail companies in the SADC region

- Descriptive statistics
- Pairwise correlations
- Fixed effects
- Random effects
- Hausman test results
- Cross-section independence
- Kao test for cointegration

- Im–Pesaran–Shin unit-root test
- Wooldridge test for autocorrelation
- Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
- Cross-sectional time-series FGLS regression

6.6 DELIMITATIONS

The research centred on food retail companies within the SADC. The study comprised a sample size of 4 590 retail outlets in the SADC region. Among these, 2 787 belong to Shoprite Holdings Ltd, 1 020 to SPAR Group Ltd, 2 080 to Pick n Pay and 783 to Woolworths Holding Ltd. The study excluded unlisted food retail stores in the SADC region due to the unavailability of easily accessible financial statements for these entities. The 4 590 sampled retail companies from around the SADC countries do not individually publish their financial reports. Instead, they amalgamate their financial reports, resulting in four holding companies whose financial statements are disclosed at a group level on the South African JSE. The dataset was accessible from the McGregor BFA Library and Bloomberg online database. Economic indicators were sourced from the IMF and via the internet. The data were from the period 1994 to 2022.

6.7 LIMITATIONS

The study employed a single measuring instrument to ensure the validity and reliability of the results in line with the research predictability. The financial statements served as the basis for measuring the variables across four companies. Ratio analysis was specifically utilised to gauge the variables derived from the financial statements over the 29-year period. Given that the listed food retail companies report their financial statements to the JSE, the researcher extracted data from the McGregor BFA Library online database. The financial statements underwent an auditing process before their publication, establishing them as reliable sources of information for this study. Despite there being 4 590 outlets in the SADC during the study period, the financial statements were not disclosed per country but at the holding company level. This resulted in a total of four listed food retail groups under investigation, with 116 observations (4 companies x 29 years from 1994 to 2022). According to Delice (2010), a sample size exceeding 30 is deemed acceptable for quantitative studies. Nyamita (2014) further contends that researchers generally view an acceptable response rate as anything

from 15% to 20% and above, with 10% being the minimum. However, for this study, the data equal the sample size for the four companies, representing a 100% match.

6.8 CHAPTER SUMMARY

This chapter records that the study employed a quantitative approach with a descriptive research design. It further discusses that a longitudinal research technique was used to analyse data across the sampled listed food retail companies in the SADC region over a 29-year period from 1994 to 2022. Moreover, the chapter discussed the research models, variables, measures and hypotheses, all of which were instrumental in addressing the research objectives. The discussion further covers the validity and reliability tests, as well as delimitations, limitations and ethical considerations followed in this study.

The subsequent chapter will present the data analysis and discuss the results of the study.

CHAPTER SEVEN

DATA ANALYSIS AND DISCUSSION OF RESULTS

7.0 INTRODUCTION

The previous chapter offered an overview of the research methods employed in this study, encompassing the type and source of the gathered data, the approach to data analysis and interpretation and how these elements contribute to addressing the study's research objectives. This chapter presents and systematically discussed the data analysis and results of the study, organised by key sub-sections aligned with the research objectives. The presentation begins with descriptive statistics aimed at identifying factors such as macroeconomic, internal and industry-specific aspects pertinent to the listed food retail companies in SADC. Furthermore, the chapter showcases various results, including pairwise correlations, fixed and random effects and several diagnostic tests: the Hausman test, cross-section dependence test, Breusch–Pagan/Cook–Weisberg test for heteroskedasticity, Wooldridge test for autocorrelation in panel data, unit-root test, Pedroni test for cointegration, FGLS and PCSEs. These analyses are directed towards evaluating the financial health of the listed food retail companies within the SADC economies. Finally, a summary of the chapter is provided.

Study objective 1: Determine the effect of the macroeconomic factors on the financial health of listed food retail companies in the SADC region.

The following sections will conduct relevant tests to ensure conditions for the analysis are met. Where issues arose, the study made the necessary adjustments to ensure the results are valid and trustworthy. The variables under consideration include CPI, IR, ER and GDP.

7.1 DESCRIPTIVE STATISTICS

Table 7.1 presents the summary statistics for the macroeconomic variables used to evaluate the financial stability of publicly traded food retail companies in the SADC region throughout the 19-year span from 1994 to 2022.

Table 7.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROCE	116	.282	.668	-.086	4.655
CPI	116	10.349	8.329	-.68	45.5
IR	116	8.595	6.117	-.69	37
ER	116	9.115	3.816	3.547	16.465
GDP	116	3.448	1.884	-3.1	6.8

Source: Developed by researcher

Consumer price index (CPI) indicates a minimum value of -0.68%, a maximum value of 45.50% and a standard deviation of 8.329. These statistics represent the fluctuations in consumer spending across the years from 1994 to 2022. This is supported by interest rate (IR), which has a minimum value of -0.69% and a maximum value of 37.00% with a standard deviation of 6.117. These results suggest that a loser CPI is associated with a lower IR.

The GDP shows a range, reaching a minimum of -3.10% and a maximum of 6.8%, with a corresponding standard deviation of 1.88%. This indicates that in certain years, the GDP experienced negative growth, while its peak expansion during the period from 1994 to 2022 did not exceed 6.8%.

The combined findings from the CPI and IR point to a relatively high standard of living in SADC countries, coupled with a slower GDP growth rate. Despite this, these nations face economic disadvantages compared to counterparts like China, which has consistently maintained an average GDP growth rate of 9% and a CPI average of 3% from 1994 to 2022. In contrast, the United States experiences an average CPI growth rate of 3%, with a GDP growth rate of 2%. This stark disparity highlights the persistent challenges confronted by SADC countries, emphasising their ongoing economic challenges and marginalisation relative to more developed nations.

The ER in the early years was lower compared to later years, reflected in its minimum value of 3.55, a maximum value of 16.47 and a standard deviation of 3.81590. This observation aligns with the findings of (Willy and Ogeto, 2012), highlighting that the adoption of the flexible ER system since 1972 poses a significant concern for economically challenged countries. In such cases, the buying power of their currency is undervalued relative to currencies of more developed nations.

The implications drawn from these results indicate that listed food retail companies operating in SADC countries, as part of developing nations, are impacted by these macroeconomic factors. Adding to the challenge is the reality that irrespective of company governance, external economic factors remain beyond management control. This highlights that consumers bear the burden, as these factors directly influence purchase prices, exemplified by the SADC CPI reaching a maximum of 45.5%.

7.2 PAIRWISE CORRELATIONS

This section displays pairwise correlations to uncover the existence and nature of relationships among macroeconomic factors.

Table 7.2: Pairwise correlations ROCE, CPI, IR, ER and GDP

Variables	(1)	(2)	(3)	(4)	(5)
(1) ROCE	1.000				
(2) CPI	0.016	1.000			
	(0.864)				
(3) IR	0.051	0.852*	1.000		
	(0.590)	(0.000)			
(4) ER	0.152	0.432*	0.490*	1.000	
	(0.103)	(0.000)	(0.000)		
(5) GDP	-0.126	0.037	-0.016	-0.215*	1.000
	(0.176)	(0.696)	(0.868)	(0.020)	

**** p<0.01, ** p<0.05, * p<0.1*

Source: developed by researcher

Table 7.2 shows that most variables exhibit correlations with one another. For instance, CPI, ER and IR are positively correlated and statistically significant. Conversely, ER and GDP have a negative and significant relationship. This indicates that changes in one of these variables result in changes in the other related variables.

7.3 INFERENTIAL STATISTICS

7.3.1: Fixed and random effects

The study used panel data analysis to account for unobserved variability. It applied both fixed effects (FE) and random effects (RE) estimation methods to clarify the relationship between the dependent variable and the explanatory variables.

Furthermore, the Hausman test was performed to choose the suitable model between fixed and random effects. Based on the data and Hausman test outcomes, the study opted for the random effects model and presented the results accordingly.

Table 7.3: Fixed effect

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
CPI	-.007	.013	-0.56	.576	-.033	.018	
IR	.006	.018	0.33	.741	-.03	.041	
ER	.025	.017	1.47	.144	-.009	.059	
GDP	-.032	.031	-1.06	.291	-.093	.028	
Constant	.186	.196	0.95	.347	-.204	.575	

Mean dependent var	0.282	SD dependent var	0.668
R-squared	0.045	Number of obs	116
F-test	1.263	Prob > F	0.276
Akaike crit. (AIC)	210.501	Bayesian crit. (BIC)	224.269

*** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

Table 7.4**:** Random effect

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
CPI	-.007	.013	-0.56	.575	-.032	.018	
IR	.006	.018	0.33	.74	-.029	.041	
ER	.025	.017	1.47	.141	-.008	.059	
GDP	-.032	.031	-1.06	.289	-.092	.027	
Constant	.186	.261	0.71	.477	-.326	.697	

Mean dependent var	0.282	SD dependent var	0.668
Overall r-squared	0.035	Number of obs	116
Chi-square	5.052	Prob > chi2	0.282
R-squared within	0.000	R-squared between	0.000

*** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

HAUSMAN TEST RESULTS

Table 7.5 shows the Hausman test results to determine the most suitable model between fixed and random effects.

Table 7.5: Results of Hausman's Test

	(b)	**(B)**	**(b-B)**	**sqrt(diag (V_b-V_B))**
Variables	**fe**	**re**	**Difference**	**S.E.**
CPI	-.0071676	-.0071676	-1.04e-17	.
IR	.0059367	.0059367	2.08e-17	.
ER	.0253205	.0253205	-3.82e-17	2.33e-10

GDP	-.0323473	-.0323473	-4.16e-17	6.59e-10

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 0.00 Prob>chi2 = 1.0000
Source: developed by researcher

The hypothesis testing for the Hausman test is that:

Null hypothesis: Random-effects model is the appropriate model to be adopted.
Alternative hypothesis: Fixed effects model is the appropriate model to be adopted.

The results of the Hausman test indicate a p-value exceeding 5%, suggesting that the null hypothesis is upheld and the alternative hypothesis is dismissed. Consequently, the study concludes that the random effects model is the appropriate choice. The results showed that CPI and GDP negatively affect a company's financial health, as measured by ROCE, but their effect is not significant. Other variables such as IR and ER positively affect financial health, but their associations are not statistically significant. However, static panel data models are often misspecified due to serial correlation of the within-group error terms, which can invalidate the point estimates and statistical inference. They have the problem of heteroskedasticity and endogeneity of some explanatory variables (Tripathi and Leitão, 2013). Therefore, to address issues of heteroskedasticity, endogeneity and contemporaneous correlation in the data, the study used Feasible Generalised Least Squares (FGLS), which is more robust. It is appropriate when there is evidence of cross-sectional dependence in the data and when the cross section is less than the time dimension, as is the case with the study's data.

The following diagnostic tests were conducted before performing FGLS to determine its suitability.

Table 7.6: Cross-section dependence test

Ho: Cross-section independence
Ha: Data are correlated across panel group

Variable	CD-test	p-value	average joint T	mean ρ	mean abs(ρ)
ROCE	-1.258	0.209	29.00	+ -0.10	0.26
CPI	-13.191	0.000	29.00	+ 1.00	1.00
IR	-13.191	0.000	29.00	+ 1.00	1.00

ER	-13.191	0.000	29.00	+ 1.00	1.00
GDP	-13.191	0.000	29.00	+ 1.00	1.00

Source: Developed by researcher

Under cross-sectional dependence test in Table 7.6, the p-values of 0.000 suggest that there is a strong indication of data correlation across panel groups. CPI, IR, ER and GDP results provide robust evidence against the null hypothesis.

Table 7.7: Breusch–Pagan/Cook–Weisberg test for heteroskedasticity

Assumption: Normal error terms
Variable: Fitted values of ROCE
H0: Constant variance

chi2(1) = 9.69
Prob > chi2 = 0.0019

Source: Developed by researcher

Given that the p-value is 0.0019, which is less than 0.05, the study rejects the null hypothesis. This means the study has statistically significant evidence to conclude that the variance of the error terms is not constant (i.e., there is heteroskedasticity).

Table 7.8: Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F (1,3) = 171.592
Prob > F = 0.0010

Source: developed by researcher

With a p-value of 0.0010, significantly below the typical significance threshold of 0.05, there is substantial evidence to challenge the null hypothesis, which asserts the absence of first-order autocorrelation in the panel data. As a result, the study rejects the null hypothesis, indicating the presence of first-order autocorrelation.

Table 7.9: Unit-root test

H0: All panels contain unit roots
Ha: Some panels are stationary

	Im–Pesaran–Shin unit root test	**Im–Pesaran–Shin unit root test for D.**
ROCE	0.0009	0.0000
CPI	0.0002	0.0000

IR	0.0000	0.0000
ER	0.9962	0.0000
GDP	0.0010	0.0000

Source: developed by researcher

The Im–Pesaran–Shin unit-root test assessed whether all panels in the variables contain unit roots or if some panels are stationary. The null hypothesis (H0) suggests that all panels contain unit roots at first difference, indicating non-stationarity, while the alternative hypothesis (Ha) proposes that panels are stationary. For each variable, the p-value indicates the likelihood of obtaining the observed test statistic if the null hypothesis is accurate. In hypothesis testing, a standard significance level is 0.05. When the p-value falls below or matches this threshold, we reject the null hypothesis. This suggests that the variables in all panels are stationary.

Table 7.10: Pedroni test for cointegration

H0: No cointegration

Ha: All panels are cointegrated

	Statistic	**p-value**
Modified variance ratio	-2.8887	0.0019
Modified Phillips–Perron t	0.1820	0.4278
Phillips–Perron t	-4.4824	0.0000
Augmented Dickey–Fuller t-test	-5.0996	0.0000

Source: developed by researcher

The modified variance ratio, Phillips-Perron t-test and Augmented Dickey-Fuller t-test yield p-values of 0.0167, 0.0206 and 0.0141, respectively, rejecting the null hypothesis of constant variance at the 0.05 significance level, indicating evidence of non-constant variance, absence of a unit root and presence of stationarity in the time series data.

Table 7.11: FGLS

ROCE	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
CPI	-.0015172	.0023794	-0.64	0.524	-.0061807	.0031463
IR_	-.0004952	.0033356	-0.15	0.882	-.0070329	.0060425
ER	.0058743	.0022947	2.56	0.010	.0013769	.0103717
GDP_	.0130371	.0041823	3.12	0.002	.0048399	.0212343

Source: developed by researcher

Table 7.11 shows that exchange rate (ER) with a coefficient of 0.0058743 and a p-value of 0.008 is positively related to financial health, as measured by ROCE and statistically significant based on the study results, the hypothesis proposing a positive relationship between ER and financial health is accepted. The results suggest that as the ER appreciates, the financial health of these companies improves. It means that an appreciating local currency makes imports cheaper, reducing the cost of goods sold for companies that rely on imported products. This reduction in costs can lead to higher profit margins. A stronger currency attracts foreign investment, boosting the overall economic environment and consumer spending power that enhances the sales and profitability of food retail companies. The outcomes validate the predictions of the open systems theory by Bertalanffy (1968) regarding the impact of market conditions on company financial health, echoing the findings of Nenu et al. (2018). According to FAOUN (2020), the dependence of the SADC region on imports exposes it to vulnerabilities stemming from price fluctuations in the global market. However, the positive correlation observed can be credited to the prioritisation of regional trade by listed food retail companies, facilitated by free trade agreements. Another assumption could be that if retail companies trade with countries abroad, they use robust financial risk measures to counteract the negative effects of ER fluctuations. A warning by Jukonis (2022), Willy and Ogeto (2012) and Quesada et al. (2012) is that if larger companies from developing countries get exposed to higher leverage, in the long run, they become more sensitive to market risk, which might be the case in the future if listed food retail companies change their financial structure to debt financing.

Likewise, the findings in Table 7.11 reveal a positive (0.0130371) and significant (p-value = 0.002) association between GDP and company performance, as measured by ROCE. This association indicates that as the regional economy grows, so does the financial health of the listed food retail companies in SADC. Therefore, the hypothesis proposing that GDP has a positive relationship with financial health is accepted. The results concur with the open system theory and findings of Pacini et al. (2017), Ongore and Kusa (2013) and Istan and Fahlevi (2020) who identified GDP as a positive predictor of banks financial health. This growth in GDP typically translates to increased disposable income and consumer confidence, leading to higher spending on food and

retail products. During periods of economic growth, these companies build up reserves and strengthen their market position, which helps them grow sales and profitability. Therefore, the results affirm the assertions made by Blekking et al. (2022) and Regional-strategic-framework (2022) that the retail companies are expected to play a crucial role in the SADC region's economic development plan, including contributing to food security and job creation. However, the consumer price index (CPI) and interest rate (IR) are not significant predictors of financial health, as measured by ROCE.

Study objective 2: Analyse the effect of the internal factors on the financial health of the listed food retail companies in the SADC region

The following section will do relevant tests to ensure conditions for the analysis are met. Where issues had risen, the study did the necessary adjustments to ensure the results are valid and trustworthy. The variables under consideration include QR, ROA, CR, LEV, ATR and ST.

7.4 DESCRIPTIVE STATISTICS

Table 7.12 provides the descriptive statistics for the common statement of financial position and the common profit or loss statement (internal factors), which are employed to assess the financial health of listed food retail companies in the SADC region over the 19-year period from 1994 to 2022.

Table 7.12: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROCE	116	.282	.668	-.086	4.655
QR	116	5.096	14.987	-2.792	85.411
ROA	116	.981	7.536	-.072	81.191
CR	116	6.354	15.178	.002	85.983
Lev	116	4.211	11.493	.049	80.068
ATR	116	19.086	59.631	.015	465.047
ST	116	43.147	178.036	0	1251.817

Source: developed by researcher

Examining the internal factors, Table 7.12 indicates that, over the period, certain listed food retail companies showed a remarkably high QR of 85.41 times compared to their current liabilities. This is supported by the CR of 85.98 times, which is almost

equivalent to the QR. The high QR and CR imply that companies maintain minimal inventory levels to possess substantial cash reserves and that they are able to meet their financial obligations as they become due. Nevertheless, a high CR indicates that the company holds significant inventory stock, which may suggest overstocking, reduced product demand, and lower sales. The minimum values for QR and CR are -2.79 and 0.00 times, respectively, signifying that some companies encountered short-term cash deficit problems during the period under investigation. The asset figures used to compute the QR and CR encompass various items, including inventories, trade receivables, other receivables, current income tax assets, investments in insurance cell captive arrangements, government bonds and bills, loans receivable, restricted cash, cash and cash equivalents, and assets designated as held for sale. This diverse array of line items indicates that the listed food retail companies in SADC not only depend on inventory sales to generate cash but also engage in other short-term investments. Consequently, the highest values for the QR and CR are over 80 times greater than the current liabilities. These liabilities include trade and other payables, contract liabilities, lease obligations, borrowings, current income tax liabilities, provisions, bank overdrafts, and liabilities directly linked to assets designated as held for sale. In particular, the indication of borrowings and bank overdraft suggests that even though food retail companies conduct their sales predominantly on a cash basis, there are times when they run out of cash, leading to short-term borrowings.

The leverage value spans from a minimum of 0.05% to a maximum of 41.49%, indicating that the listed food retail companies in SADC have a substantial share of equity financing compared to long-term debt in their capital structure. A company with low leverage is considered to be highly financed through equity. According to the agency theory, a situation of low leverage or a high equity/asset ratio tends to increase the agency costs associated with shareholders. This can happen by either allowing managers to act more in the interests of shareholders or discouraging them from doing so (Berger and Di Patti, 2006). The utilisation of equity financing results in a cost of equity capital, however, it reduces interest expenses for debt capital (Berger and Di Patti, 2006). The principles of the agency theory suggest that corporate managers tend to avoid financing strategies, such as external debt financing, that would expose their company investments to external scrutiny. Instead, they choose financing strategies, like equity financing, that shield them from external monitoring (Frank and Goyal,

2008). This theoretical assumption appears applicable in the case of the listed food retail companies in SADC.

ROA shows a maximum value of 442.81%, a minimum value of -7.20% and a standard deviation of nearly 60.04%. These findings signify how certain food retail companies' management have efficiently utilised their assets, while others have faced challenges in doing so, resulting in a considerable gap of 60.04% in their performance. This variance highlights differences in competitiveness among companies in the dataset.

Total asset turnover ratio (ATR) presents the lowest value of 0.02%, a maximum value of 197.27% and a standard deviation of 42.57%. These findings suggest that some companies showed poor asset utilisation to generate sales, while others achieved an efficiency ratio of nearly 197%, with a standard deviation of close to 43%, showcasing variability in companies' performance in this aspect.

7.5 PAIRWISE CORRELATIONS

The findings show the pairwise correlations between the variables, as presented in Table 7.13.

Table 7.13: Pairwise correlations for ROCE, QR, ROA, CR, LEV, ATR and ST

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) ROCE	1.000						
(2) QR	-0.085	1.000					
	(0.365)						
(3) ROA	0.334*	-0.024	1.000				
	(0.000)	(0.794)					
(4) CR	-0.100	0.997*	-0.031	1.000			
	(0.285)	(0.000)	(0.739)				
(5) Lev	0.145	-0.066	0.660*	-0.091	1.000		
	(0.120)	(0.478)	(0.000)	(0.333)			
(6) ATR	0.183*	-0.092	0.732*	-0.111	0.901*	1.000	
	(0.049)	(0.325)	(0.000)	(0.235)	(0.000)		
(7) ST	-0.057	-0.067	0.015	-0.084	0.588*	0.561*	1.000
	(0.546)	(0.477)	(0.871)	(0.368)	(0.000)	(0.000)	

**** p<0.01, ** p<0.05, * p<0.1*

Source: developed by researcher

Table 7.13 indicates that the interplay between the variables exhibits a diverse nature. ROCE and ROA show a positive and significant association, meaning an increase in ROA leads to an improvement in the financial health of listed food retail companies in the SADC region, as measured by ROCE. Conversely, ROCE and ATR show a negative and significant association, indicating that an increase in ATR decreases the financial health of these companies. ROA and CR are positively and significantly related. Lev is positively and significantly related to ATR and ST. Moreover, ATR is positively and significantly related to ST.

7.6 INFERENTIAL STATISTICS

Fixed and random effects

Panel data analysis is used to control for unobserved heterogeneity. This study estimated the panel data model using both fixed effects and random effects techniques. To determine the best fit for the model, the Hausman test was conducted to choose between fixed effects and random effects. The dependent variable is ROCE, while the independent variables are QR, ROA, CR, Lev, ATR and ST. The sample for the study consists of data from four companies over the period from 1994 to 2022.

Table 7.14: Fixed effect

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
QR	.191	.055	3.45	.001	.081	.301	***
ROA	.031	.015	2.05	.043	.001	.061	**
CR	-.191	.055	-3.51	.001	-.299	-.083	***
Lev	-.009	.011	-0.76	.448	-.031	.014	
ATR	0	.003	-0.11	.909	-.005	.005	
ST	0	.001	0.29	.774	-.001	.001	
Constant	.529	.094	5.66	0	.344	.714	***

Mean dependent var	0.282	SD dependent var	0.668
R-squared	0.188	Number of obs	116
F-test	4.097	Prob > F	0.000
Akaike crit. (AIC)	195.611	Bayesian crit. (BIC)	214.886

**** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

Table 7.15: Random effect

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig

QR	.152	.057	2.67	.008	.041	.264	***
ROA	.05	.016	3.07	.002	.018	.083	***
CR	-.155	.056	-2.75	.006	-.265	-.044	***
Lev	-.016	.013	-1.26	.209	-.041	.009	
ATR	-.001	.003	-0.45	.654	-.007	.004	
ST	0	.001	0.58	.563	-.001	.001	
Constant	.517	.102	5.05	0	.316	.717	***

Mean dependent var	0.282	SD dependent var	0.668
Overall r-squared	0.186	Number of obs	116
Chi-square	24.963	Prob > chi2	0.000
R-squared within	0.167	R-squared between	0.681

**** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

HAUSMAN TEST RESULTS

Table 7.16 shows the Hausman test results to determine the most suitable model between fixed and random effects.

Table 7.16: Results of Hausman's test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
Variables	**fe**	**re**	**Difference**	**S.E.**
QR	.1909794	.1522034	.038776	.
ROA	.0311351	.0504579	-.0193228	.
CR	-.191307	.1548212	-.0364858	.
Lev	-.008677	-.0158704	.0071934	.
ATR	-.000292	-.0012711	.0009791	.
ST	.0001513	.0003368	-.0001855	.

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 41.81 Prob>chi2 = 0.0000

Source: developed by researcher

The hypothesis testing for the Hausman test is that:

Null hypothesis: Random-effects model is the appropriate model to be adopted.

Alternative hypothesis: Fixed effects model is the appropriate model to be adopted.

Table 7.16 presents the Hausman test results, which indicate a significant probability value at the 5% level. This significance suggests that the null hypothesis, which posits that random effects are appropriate, should be rejected. Consequently, the alternative hypothesis, asserting that fixed effects are suitable, should be accepted. Therefore, the study will focus on discussing the fixed effects results.

The results indicated that QR and ROA positively and significantly impact financial health, as measured by ROCE. Specifically, the fixed-effects model produced positive coefficients of 0.191 and 0.031 for QR and ROA, respectively, both significant at the 5% level. This suggests that an increase in QR and ROA leads to a 19.1% and 3.1% improvement in financial performance, respectively. Conversely, CR shows a negative and significant coefficient (0.191) with financial performance, implying that an increase in CR results in a 19.1% decrease in the companies' financial health. However, other control variables, such as Lev, ATR and ST, did not show a significant association with financial performance. To address issues of heteroskedasticity, endogeneity and contemporaneous correlation in the data, the study used PCSE, which is more robust. It is appropriate when there is evidence of cross-sectional dependence in the data and when the cross section is less than the time dimension, which is exactly the case with the study data.

The following diagnostic tests were conducted before performing PCSE to determine its suitability.

Table 7.17: Unit-root test

H0: All panels contain unit roots
Ha: Some panels are stationary

	Im–Pesaran–Shin
Variables	**p-value (Sig)**
ROCE	0.0019
QR	0.0000
CR	0.0000
ROA	0.0000
LEV	0.0000
ATR	0.0000

ST	0.1524

Source: developed by researcher

The Im–Pesaran–Shin unit-root test was used to determine if all panels within the variables have unit roots, indicating non-stationarity, or if some panels are stationary. The null hypothesis (H0) posits that all panels have unit roots, while the alternative hypothesis (Ha) suggests that at least some panels are stationary. The p-value for each variable reflects the likelihood of obtaining the observed test statistic if the null hypothesis is true. With a typical significance level set at 0.05, if the p-value is equal to or less than this threshold, the null hypothesis is rejected. In this analysis, the p-values for ROCE, QR, ROA, LEV, and ATR fall below 0.05, providing strong evidence to reject the null hypothesis. On the contrary, ST shows no significance, indicating that it is not stationary and thus the null hypothesis is not rejected for this variable. Overall, the findings suggest that some panels within the variables are stationary.

In order to bolster the validity and reliability of the findings from the unit root test, the study further employed the Westerlund test for cointegration.

Table 7.18: Westerlund test for cointegration: ROCE, QR, ROA, LEV, ATR and ST

H0: No cointegration
Ha: Some panels are cointegrated

	Statistic	p-value
Variance ratio	9.1194	0.0000

Source: developed by researcher

Results from Table 7.18 confirm that some panels show cointegration, with the hypothesis accepted and the alternative null hypothesis rejected. This supports the rationale for employing the Westerlund test for cointegration and contributes to a more in-depth understanding of the underlying dynamics among variables.

Table 7.19: Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F (1,3) = 207.491
Prob > F = 0.0007

Source: developed by researcher

In order to identify first-order autocorrelation in the residuals of a panel data regression model, the Wooldridge test was employed. The test uses an F-statistic, which in this case is 207.491, to evaluate the null hypothesis of no autocorrelation. A high F-statistic suggests substantial evidence against the null hypothesis. With a p-value of 0.0007, the study rejects the null hypothesis of no first-order autocorrelation, confirming the presence of autocorrelation at all standard significance levels.

Table 7.20: Breusch–Pagan/Cook–Weisberg test for heteroskedasticity

Assumption: Normal error terms
Variable: Fitted values of ROCE
H0: Constant variance

chi2(1) = 19.29
Prob > chi2 = 0.0000

Source: developed by researcher

The Breusch–Pagan/Cook–Weisberg test for heteroskedasticity determined whether there is constant variance (homoskedasticity) in the residuals of a regression model. Given the p-value of 0.0000, the study rejects the null hypothesis of constant variance at any conventional significance level. Therefore, the statistical tests confirm the presence of heteroskedasticity.

Therefore, in the subsequent section, robust standard errors are computed to address and mitigate the impact of this heteroskedasticity in the analysis.

Table 7.21: Correlated panels corrected standard errors (PCSEs)

Panels: correlated (balanced)
Autocorrelation: no autocorrelation

ROCE	Coefficient	std. err.	z	P>z	[95% conf.	interval]
QR	.1522034	.057781	2.63	0.008	.0389547	.2654521
CR	-.1548212	.0572461	2.70	0.007	-.2670214	-.0426209
ATR	-.0012711	.0015152	0.84	0.402	-.0042408	.0016986
Lev	-.0158704	.0073466	2.16	0.031	-.0302694	-.0014714
ROA	.0504579	.016576	3.04	0.002	.0179696	.0829461
ST	.0003368	.0002819	1.19	0.232	-.0002156	.0008893
_cons	.5167914	.0968074	5.34	0.000	.3270524	.7065305

Source: developed by researcher

The PCSEs are statistically significant at a 5% level of significance. As shown in Table 7.21, there is a positive (0.1522034) and significant (0.008) association between the QR and financial health, as measured by ROCE, in the listed food retail sector in SADC. The findings indicate that companies with higher liquidity are generally performing better financially. Therefore, the hypothesis that QR influences financial health is accepted. An increase in QR implies a decrease in closing inventory, which would mostly be sold if well managed. The QR also measures a company's ability to meet its short-term liabilities with its most liquid assets, suggests that food retailers with a strong QR are more capable of efficiently managing their immediate obligations. This financial health translates into better overall performance, as these companies are likely better positioned to capitalise on market opportunities, handle unexpected expenses and maintain smooth operations without the risk of liquidity crises. The results align with the previous findings by Faruk and Habib (2010) and the financial analysis theory presented by Endri et al. (2020), which state that the QR influences the financial health of a company.

The negative (-.1548212) and significant (0.007) relationship between the CR and financial performance in the listed food retail sector indicates that companies with higher current ratios are generally performing worse financially. The CR, which measures a company's ability to meet its short-term liabilities with its current assets, suggests that companies with excessively high current ratios due to overstocking or inefficient current asset management, can hinder financial health. This finding opposes the hypothesis that CR positively influences financial health, demonstrating instead a negative and significant association. This result is consistent with the findings of Pirveli (2014) and Kieso et al. (2019), who note that a high current ratio often indicates that a significant portion of assets is tied up in less productive areas. This inefficiency can lead to poorer financial health as these companies may not be utilising their current assets optimally to generate profits. Therefore, while liquidity is important, an excessively high current ratio can signal operational inefficiencies and suboptimal asset management, ultimately detracting from overall financial health.

Lev shows a negative (-.0158704) and statistically significant (0.031) relationship with company financial health, as measured by ROCE. The results infer that an increase in company Lev or debt financing compromises financial health. Therefore, the

hypothesis speculating that Lev has a positive influence on the company's financial health is rejected and the null hypothesis is accepted. Simultaneously, the adoption of both the financial analysis theory and the agency theory, guided by the belief that leveraging introduces an element of financial risk in the company (Pirveli, 2014), (Kieso et al., 2019) (Tripathy and Shaik, 2020), is deemed suitable. The outcome concurs with Hutten (2014). According to the agency theory, big companies are inclined to favour debt over equity financing to capitalise on the tax shield benefits on cost of debt capital payments (Tripathy and Shaik, 2020). However, Ilyukhin (2015) argues that this is not a universal principle as some companies prefer equity financing rather than debt in order to avoid financial risks and external scrutiny of their business by institutions like the rating agencies, which might be the case with the listed food retail companies in SADC. The food retail industry is known for its relatively low profit margins and intense competition, factors that may constrain the effectiveness of Lev (Competition-commission-South-Africa, 2019). This could be one of the reasons why this study observed higher levels of equity financing compared to debt financing, a trend also corroborated by Masojada (2021).

The study found a positive (.0504579) and significant (0.002) association between ROA and financial health, as measured by ROCE. This indicates that companies with higher ROA are generally performing better financially. Therefore, the hypothesis that ROA has a positive and significant influence on a company's financial health is accepted. These results align with the financial analysis theory, which postulates that higher ROA leads to higher profits when assets are well managed and utilised, as noted by Kieso et al. (2019). Moreover, these findings concur with those of Sukmawati and Garsela (2016), who also discovered a positive link between ROA and profitability. The results emphasise the need for strategic asset management, where retailers focus on optimising the use of their inventory, facilities and equipment to enhance profitability. However, the assets turnover ratio (ATR) and stock turnover (ST) are not significant predictors of financial health, as measured by ROCE, which confirms the findings by Faruk and Habib (2010), Endri et al. (2020), Sukmawati and Garsela (2016), Arnold (2008) and Hutten (2014).

Study objective 3: Investigate the effect of the industry-specific factors on the financial health of the listed food retail companies in the SADC region.

The following section conducts relevant tests to ensure that the conditions for analysis are met. Where issues arise, the study implements necessary adjustments to ensure the results are valid and trustworthy. The variables under consideration include the company size (size), company age (age), company competitiveness (CC), human capital (HC), marketing strategy (MS), governance (G) and social responsibility (SR).

7.7 DESCRIPTIVE STATISTICS

Table 7.22 furnishes the descriptive statistics for the industry-specific factors, utilised for evaluating the financial health of listed food retail companies in the SADC region over the 19-year period from 1994 to 2022.

Table 7.22: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROCE	116	.282	.668	-.086	4.655
SIZE	116	475969.42	866880.21	1117	5153945
AGE	116	55.819	22.798	15	91
CC	116	3167267.1	8326821.2	6540	47651548
HC	116	526228.53	1334415.5	0	7195133
MS	116	7723.457	30528.233	0	221427
G	116	13.767	12.894	6	147
SR	116	1103558.9	10992810	0	1.185e+08

Source: developed by researcher

Table 7.22 displays the company size, showcasing a minimum value of 1 117 000 and a maximum value of 5 153 945, with a standard deviation of 869 492.851 among competing companies. This indicates significant disparity in the size of companies concerning their total assets. This diversity is further highlighted by the standard deviation of 869 492.851.

The findings find support in the analysis of age, which reveals a minimum of 15 years, a maximum of 91 years and a standard deviation of 22.798 years. This suggests that some companies tend to possess more assets than others. A similar pattern is observed in the examination of company competitiveness (CC) measured by sales value in this study. For instance, CC shows a minimum sales value of 6 540 and a maximum of 47 651 548, with a standard deviation of 8 326 821. This implies variations in competitiveness among companies based on customer preferences for their products, indicating differing levels of competitiveness in the market. Further

reinforcing this analysis is the examination of companies' marketing strategy (MS), which displays a minimum spending of 215 and a maximum spending of 22,1427, along with a standard deviation of 51,213.834.

Human capital (HC) shows a minimum value of 740 000, a maximum value of 7 195 133 and a standard deviation of 1 509 074.479. This indicates a significant disparity in staff salaries among companies, possibly arising from variations in compensation between general staff and those in higher positions. This observation aligns with the analysis of companies' efforts in social responsibility (SR), where the minimum value is 96 000, the maximum value is 94 021 and the standard deviation is 282 583.012. This suggests that as companies become more competitive, they also tend to enhance their commitment to social responsibility.

The study also examined the number of directors in each company, represented by governance (G). The variable G shows a maximum value of 25, a minimum value of 6 and a standard deviation of 3.254. These findings reveal a minimum gap of at least three directors between the companies. When correlating these findings with the earlier discussion on leverage, it suggests that a significant number of directors from listed food retail companies exhibit a preference for debt over equity in the capital structure. This behaviour contradicts the narrative that debt financing strategies in companies can be best explained by the agency theory concept, which suggests that managers attempt to avoid external debt financing to protect company investments from external exposure; instead, they chose equity financing to shield themselves from external monitoring (Frank and Goyal, 2008).

7.8 PAIRWISE CORRELATIONS

Variables under consideration for pairwise correlation tests are company size, age, CC, HC, MS, G and SR. The findings showing the connections between these variables are presented in Table 7.23.

Table 7.23: Pairwise correlations for ROCE, SIZE, AGE, CC, HC, MS, G and SR

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ROCE	1.000							
(2) SIZE	-0.085	1.000						

	(0.363)							
(3) AGE	-0.067	-0.247*	1.000					
	(0.477)	(0.008)						
(4) CC	-0.084	0.240*	-0.459*	1.000				
	(0.372)	(0.010)	(0.000)					
(5) HC	-0.115	0.073	-0.416*	0.441*	1.000			
	(0.219)	(0.437)	(0.000)	(0.000)				
(6) MS	-0.085	-0.064	0.254*	-0.083	-0.057	1.000		
	(0.365)	(0.495)	(0.006)	(0.376)	(0.542)			
(7) G	0.096	-0.052	-0.169	0.027	0.046	-0.091	1.000	
	(0.307)	(0.576)	(0.070)	(0.770)	(0.622)	(0.330)		
(8) SR	-0.027	-0.022	-0.088	-0.032	-0.039	-0.025	0.038	1.000
	(0.775)	(0.817)	(0.348)	(0.730)	(0.677)	(0.789)	(0.684)	

**** p<0.01, ** p<0.05, * p<0.1*

Source: developed by researcher

The pairwise correlations reveal no associations between financial health, as measured by ROCE and the independent variables SIZE, AGE, CC, HC, MS, G and SR. However, there is a positive and strong relationship between SIZE and CC at the 10% significance level, while SIZE shows a negative and strong link with AGE at the 10% significance level. AGE, HC and CC exhibit a robust and negative relationship, whereas AGE shows a strong and positive link with MS at the 10% significance level. Furthermore, CC and HC are strongly and positively linked at the 10% significance level.

7.9 INFERENTIAL STATISTICS

7.9.1 Fixed and random effects

The study employed panel data analysis to control for unobserved heterogeneity. Both fixed effects (FE) and random effects (RE) estimation techniques were utilised in the model to elucidate the causal relationship between the dependent variable and the regressors. In addition, the Hausman test was conducted to determine the most appropriate model between fixed and random effects. Based on the dataset and the Hausman test results, the study selected the random effects model and reported the findings accordingly.

Table 7.24: Fixed effects

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
SIZE	0	0	0.91	.362	0	0	
AGE	.021	.007	2.88	.005	.006	.035	***
CC	0	0	0.85	.397	0	0	

HC	0	0	0.22	.826	0	0	
MS	0	0	-0.59	.558	0	0	
G	-.003	.005	-0.67	.501	-.012	.006	
SR	0	0	0.02	.985	0	0	
Constant	-.885	.42	-2.11	.038	-1.718	-.051	**

Mean dependent var	0.282	SD dependent var	0.668
R-squared	0.076	Number of obs	116
F-test	1.233	Prob > F	0.279
Akaike crit. (AIC)	212.638	Bayesian crit. (BIC)	234.667

*** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

Table 7.25: Random effects

ROCE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
SIZE	0	0	-1.00	.318	0	0	
AGE	-.005	.003	-1.45	.148	-.012	.002	
CC	0	0	-0.71	.48	0	0	
HC	0	0	-1.40	.163	0	0	
MS	0	0	-0.61	.545	0	0	
G	.004	.005	0.71	.477	-.006	.013	
SR	0	0	-0.60	.55	0	0	
Constant	.62	.246	2.52	.012	.137	1.102	**

Mean dependent var	0.282	SD dependent var	0.668
Overall r-squared	0.057	Number of obs	116
Chi-square	6.493	Prob > chi2	0.483
R-squared within	0.012	R-squared between	0.994

*** p<.01, ** p<.05, * p<.1*

Source: developed by researcher

HAUSMAN TEST RESULTS

Table 7.26 shows the Hausman test results to determine the most suitable model between fixed and random effects.

Table 7.26: Results of Hausman's Test

	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
Variables	**fe**	**re**	**Difference**	**S.E.**
SIZE	6.66e-08	-7.57e-08	1.42e-07	.
AGE	.0207243	-.0049551	.0256794	.0063132
CC	7.20e-09	-6.37e-09	1.36e-08	.

HC	1.20e-08	-7.60e-08	8.81e-08	5.09e-09
MS	-1.19e-06	-1.28e-06	9.73e-08	.
G	-.0030616	.0035171	-.0065787	.
SR	9.94e-11	-3.43e-09	3.53e-08	.

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 14.53 Prob>chi2 = 0.0023

Source: developed by researcher

The hypothesis testing for the Hausman test is that:
Null hypothesis: Random-effects model is the appropriate model to be adopted.
Alternative hypothesis: Fixed effects model is the appropriate model to be adopted.

Table 7.26 presents the Hausman test results, which indicate a significant probability value at the 5% level. This significance suggests that the null hypothesis, which posits that random effects are appropriate, should be rejected. Consequently, the alternative hypothesis, asserting that fixed effects are suitable, should be accepted. Therefore, the study will focus on discussing the fixed effects results.

The results indicated that company AGE positively and significantly impacts financial health, as measured by ROCE. Specifically, the fixed-effects model produced positive coefficients of .021 significant at the 5% level. This suggests that an increase in company AGE leads to a 2.1% increase in company financial health. However, other control variables, such as company SIZE, CC, HC, MS, G and SR did not show a significant association with financial performance.

To address issues of heteroskedasticity, endogeneity and contemporaneous correlation in the data, the study used FGLS, which is more robust. It is appropriate when there is evidence of cross-sectional dependence in the data and when the cross section is less than the time dimension, which is exactly the case with the study data.

The following diagnostic tests were conducted before performing PCSE to determine its suitability:

Table 7.27: Cross-section independence, CD ~ N(0,1)

Variable	CD-test	p-value	average joint	mean ρ	mean abs(ρ)
ROCE	+ -1.258	0.209	29.00	+ -0.10	0.26
SIZE	+ .376	0.707	29.00	+ 0.03	0.27
AGE	+ 13.183	0.000	29.00	+ 1.00	1.00
CC	+ .87	0.384	29.00	+ 0.07	0.47
HC	+ 2.028	0.043	29.00	+ 0.15	0.19
MC	+ 1.342	0.179	29.00	+ 0.10	0.23
G	+ 3.193	0.001	29.00	+ 0.24	0.24
SE	+ .631	0.528	29.00	+ 0.05	0.11

Source: developed by researcher

Under the null hypothesis of cross-sectional independence, CD ~ N(0,1), variables with p-values close to zero are AGE, HC and G, indicating that data are correlated across panel groups.

Table 7.28: Kao test for cointegration

H0: No cointegration
Ha: All panels are cointegrated

	Statistic	p-value
Modified Dickey–Fuller t-test	-5.5090	0.0000
Dickey–Fuller t-test	-3.4762	0.0003
Augmented Dickey–Fuller t-test	-3.0773	0.0010
Unadjusted modified Dickey–Fuller t-test	-5.7094	0.0000
Unadjusted Dickey–Fuller t-test	-3.5094	0.0002

Source: developed by researcher

The Kao test for cointegration establishes at a p-value less than 5 percent that all panels display cointegration, as indicated in Table 7.35 by modified Dickey-Fuller t, Dickey-Fuller t, augmented Dickey-Fuller t, unadjusted modified Dickey-Fuller t and unadjusted Dickey-Fuller t-tests.

Table 7.29: Im–Pesaran–Shin unit-root test for ROCE, SIZE, AGE, CC and G

H0: All panels contain unit roots
Ha: Some panels are stationary

Variables	**p-value (Sig).d**
ROCE	0.0000

SIZE	0.0001
AGE	0.0000
CC	0.0000
HC	0.0000
MS	0.0000
G	0.0000
SE	0.0000

Source: developed by researcher

The Im–Pesaran–Shin unit-root test was used to determine whether all panels in the dataset have unit roots or if some are stationary. The null hypothesis (H0) posits that all panels exhibit unit roots, implying non-stationarity, while the alternative hypothesis (Ha) suggests that at least some panels are stationary. The p-value for each variable indicates the likelihood of observing the test statistic if the null hypothesis were correct. With a typical significance threshold of 0.05, a p-value below or equal to this level leads to rejecting the null hypothesis. In this analysis, the p-values for ROCE, SIZE, AGE, CC, HC, MS, G, and SE are all below 0.05, providing strong evidence at first difference to reject the null hypothesis. Consequently, the results indicate that some panels within these variables are stationary.

Table 7.30: Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1,3) = 461.596
Prob > F = 0.0002

Source: developed by researcher

The Wooldridge test was applied in the study to identify first-order autocorrelation in the residuals of the panel data regression model. With a p-value of 0.0002, the study rejects the null hypothesis of no first-order autocorrelation, indicating that autocorrelation is present at all standard significance levels.

Table 7.31: Breusch–Pagan/Cook–Weisberg test for heteroskedasticity

Assumption: Normal error terms
Variable: Fitted values of ROCE
H0: Constant variance

chi2(1) = 44.92

Prob > chi2 = 0.0000

Source: developed by researcher

The Breusch–Pagan/Cook–Weisberg test for heteroskedasticity determined whether there is constant variance (homoskedasticity) in the residuals of a regression model. Given the p-value of 0.0000, the study rejects the null hypothesis of constant variance at any conventional significance level.

Table 7.32: Cross-sectional time-series FGLS regression

ROCE	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
SIZE	4.64e-08	6.85e-08	0.68	0.498	-8.78e-08	1.81e-07
AGE	.0061759	.0023527	2.62	0.009	.0015646	.0107871
CC	1.06e-09	9.38e-09	0.11	0.910	-1.73e-08	1.95e-08
HC	-2.35e-08	8.05e-08	0.29	0.770	-1.81e-07	1.34e-07
MS	-6.37e-07	1.64e-06	0.39	0.697	-3.84e-06	2.57e-06
G	-.0067471	.0028877	2.34	0.019	-.0124068	-.0010874
SE	-1.57e-09	3.74e-09	0.42	0.675	-8.91e-09	5.77e-09

Source: developed by researcher

In Table 7.32, the results confirm the positive (0.0061759) and significance (0.009) of company AGE as a predictor of company financial health, as measured by ROCE. This indicates that as the company matures in age, there is a concurrent improvement in its financial health. Therefore, the hypothesis asserting that company AGE has a positive relationship with financial health is endorsed. The findings stress the applicability of the value-chains theory, that the older companies in the industry may have established brand recognition and customer loyalty over time, leading to a more stable customer base and consistent revenue streams (Walters and Rainbird, 2007b, Morris et al., 2021). Consistent with findings from a number of other authors (Ramasamy et al., 2005, Ganda, 2021a), our results support the notion that company AGE exerts an influence on performance. The claims made by Loderer and Waelchli (2010), suggesting that as the company matures, costs rise due to asset obsolescence, leading to decreased financial performance, are not applicable in the context of this study. Therefore, we are confident that a company's maturity wields influence in the market. As at 2022, the ages of the scrutinised companies: WLW, SP, PnP and SPT are 91, 90, 55 and 43, respectively. SPT stands out as the youngest yet holds the

position of the most widespread supermarket (Nair, 2019). As highlighted by Nair (2019), the SPT business model is characterised by its ability to serve diverse income groups across the SADC region. Therefore, the analysis suggests that while AGE is important to improve company financial health, it should be combined with company-specific innovative business ideas for optimal effectiveness.

Size of company governance (G) shows a negative (-.0067471) but significant (0.016) relationship with company financial health, as measured by ROCE. The results suggest that there is sufficient evidence to support the null hypothesis. Therefore, the study's hypothesis predicting a positive relationship between the size of company governance and financial health is rejected. The results align with the agency theory (Rozeff, 1982), suggesting that poorly managed companies face challenges in enhancing their financial health. Likewise, Nuhiu et al. (2017), Endri et al. (2020) and Ongore and Kusa (2013) found that companies with good governance tend to prosper compared to those with poor governance. These findings could have varied interpretations depending on the industry context. However, concerning the present study, it suggests that augmenting the number of directors in an attempt to enhance management capacity exacerbates noise and agency conflicts within the company. Moreover, the study suggests that management may be prioritising self-interest over shareholder value maximisation, leading to diminished financial health. However, company SIZE, company competitiveness (CC), human capital (HC), marketing strategy (MS) and social responsibility (SE) are not significant predictors of financial health, as measured by ROCE.

7.10 SUMMARY OF THE ORIGINALITY OF THE STUDY RESULTS

This study contributes originality to the existing body of knowledge by examining financial health through the analysis of the relationships between financial health and macroeconomic factors, internal factors, and industry-specific factors, with a regional focus on SADC countries. In the last chapter, it will develop a conceptual framework that emphasizes the comprehensive integration of these factors examined as key determinants of financial health for listed retail companies. Moreover, this research is the first to establish that only open systems theory, financial analysis theories, value-chain theory, and agency theory are capable of driving the financial health of listed

retail companies within the SADC region. Exclusively, it evaluates the relationship between macroeconomic, internal, and industry-specific factors and the financial health of listed retail companies in the SADC region covering the period from 1994 to 2022 using advanced econometric techniques such as Fixed and Random Effects models, PCSEs, and FGLS, an approach that has not been applied in previous studies.

7.11 CHAPTER SUMMARY

The chapter presented and discussed the study results in alignment with the study objectives. When examining the descriptive results, it was observed that during periods of low CPI, the IR tends to be low as well. Moreover, while GDP experienced negative growth in some years, its highest expansion did not surpass seven percent. The adoption of the flexible ER system since 1972 appears to pose challenges for developing countries. Furthermore, the analysis revealed that companies tend to maintain minimal inventory levels to ensure substantial cash reserves, enabling them to meet their financial obligations promptly. The leverage values indicated that listed food retail companies in SADC primarily rely on equity financing over long-term debt in their capital structure. Moreover, significant disparities in company sizes, as measured by total assets, were evident. Moreover, the findings indicated considerable variability in company ages. This implies that listed food retail companies have diverse ages, which consequently impacts their business model and market size. The number of directors as a measure of governance exhibited a standard deviation of three. The hypotheses tested for objectives one, two and three presented a mixture of results, with some confirming existing theories while others refuting them.

The first objective sought to examine how macroeconomic factors influence financial health. This led to the rejection of the hypothesis that CPI and IR have a positive and significant impact on financial health. However, the hypotheses that ER and GDP are positive and significant predictors of financial health were accepted aligning with the assumptions of the open system theory.

Objective two of the research focused on examining how internal factors influence financial health. The study confirmed the hypotheses that both the QR and ROA positively affect financial health, consistent with financial analysis theory that indicates

improved asset investment bolsters financial health. On the contrary, the hypotheses suggesting a positive connection between the CR and Lev and financial health were not supported, leading to the acceptance of the null hypotheses for these relationships.

Objective three of the study aimed to investigate the effect of industry-specific factors on financial health. The hypothesis proposing a positive relationship between company age and financial health was accepted, confirming the assumptions of the value-chains theory that industry-specific factors, including company age, serve as distinctive resources to enhance company performance. However, the study's hypothesis on the positive association between governance (G) and financial health confirmed that governance has a negative and strong association with financial health. This indicates that augmenting the number of directors in an attempt to enhance management capacity exacerbates noise and agency conflicts within the company. This finding aligns with agency theory, which postulates that companies experiencing poor governance display a weak financial position.

The next chapter offers the summary, conclusions and recommendations for the study.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.0 INTRODUCTION

The preceding chapter systematically detailed the data analysis and the study's findings. It included an array of results, such as pairwise correlations, fixed and random effects, and several diagnostic assessments. These assessments comprised the Hausman test, the cross-section dependence test, the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity, the Wooldridge test for autocorrelation in panel data, the unit-root test, the Pedroni test for cointegration, as well as analyses using FGLS and PCSEs methods. This chapter provides a summary of the study's findings, conclusions and implications of such findings concerning the study objectives. These objectives include investigating the effect of macroeconomic factors, internal factors and industry-specific factors on financial health. Following the study findings, the subsequent section offers policy recommendations and discusses the study's contribution to knowledge. In addition, it addresses the study limitations and provides suggestions for further research.

Chapter one of the thesis offered a comprehensive introduction, including the background of the study, statement of the problem, aim of the study, research hypotheses and the significance of the study. It also addressed the delimitations and limitations of the study and concluded by outlining the organisation of the thesis. Chapter two provided an extensive review of the literature concerning listed food retail companies in the SADC region. It identified and discussed success factors and key challenges faced by these companies. Chapter three reviewed the literature on financial health, focusing on different financial ratios. Chapter four presented the theoretical framework underlying the study, discussing relevant theories on macroeconomic factors, internal factors and industry-specific factors. It applied theories from retail and other industries to the context of listed food retail companies in the SADC region, considering the limited existing studies in this area. Objectives were aligned with the open systems theory, financial analysis theory, value chains theory and agency theory. Chapter five conducted a review of empirical studies on factors influencing financial health, analysing internal, macroeconomic and industry-specific factors and formulating hypotheses to be tested in the study. Chapter six

discussed the research methodologies employed to assess factors affecting the financial health of listed food retail companies in SADC, including sampling techniques and statistical methods. Lastly, in relation to the research objectives and theories, chapter seven presented and interpreted the study results, employing various statistical methods.

8.1 SUMMARY OF RESEARCH FINDINGS

The key findings of this study are summarised as follows:

The first objective of this study aimed to assess how macroeconomic factors impact the financial health of listed food retail companies in the SADC region. GDP and exchange rates (ER) were found to significantly and positively influence financial health, as measured by return on capital employed (ROCE). Specifically, increases in GDP and ER were associated with improved financial health among these companies. The findings confirm that the financial health of these companies suffers as GDP and ER weaken during economic recessions. This observation is consistent with the principles of the open systems theory.

The second objective of the study analysed how internal factors affect the financial health of listed food retail companies in the SADC region. The study used QR, CR, ATR, Lev, ROA and ST as independent variables, with financial health measured by ROCE. Results showed that QR and ROA positively and significantly influenced financial health. On the other hand, CR and Lev had a strong negative impact on the financial health. The results confirm that during economic recessions, where consumer spending weakens, holding inventory stock and having assets that become redundant and idle can compromise the financial health of these companies. Moreover, the study confirms that during economic downturns resulting in increased debt borrowings, the financial health of these companies decreases. These findings are consistent with the principles of the financial analysis theory.

The third objective of the study examined how industry-specific factors impact the financial health of listed food retail companies in the SADC region. Independent variables included company size (SIZE), company age (AGE), company

competitiveness (CC), human capital (HC), marketing strategy (MS), size of company governance (G) and social responsibility (SE), with financial health measured by ROCE as a dependent variable. The company age showed positive and significant associations with financial health, whereas the governance size showed an adverse link. These results confirm that unlike newer listed food retail companies, older ones were adept at navigating challenging market conditions such as COVID-19 and other economic shocks, thanks to their stronger and established strategies and market presence. Likewise, an increasing number of company directors presents governance challenges in managing these companies to enhance financial health. The study's findings are consistent with the principles of value chain theory and agency theory.

The fourth objective of the study aimed to develop a conceptual framework outlining the factors influencing the financial health of listed food retail companies in the SADC region. This proposed framework is detailed in Figure 8.1.

8.2 CONCLUSIONS

The primary aim of this study was to assess the financial health of listed food retail companies in the SADC region and develop a conceptual framework outlining the factors influencing it. The study revealed that the financial health of these companies is shaped by a variety of factors spanning macroeconomic, internal and industry-specific areas. Significantly positive macroeconomic factors impacting financial health include GDP and ER. Internally, QR and ROA emerged as robust positive influences, whereas Lev and CR were identified as negative and significant factors. Industry-specific factors such as company age showed positive and significant impacts, while increasing the governance size was found to weaken financial health. These findings contribute to a comprehensive understanding of the dynamics affecting financial health in the listed food retail sector within the SADC region, highlighting both the resilience and vulnerabilities associated with different operational and external environments.

8.2.1 Practical implications

Food retail companies are fundamental to accomplishing the developmental objectives set out in the SADC regional indicative strategic development plan (RISDP), which include to promote sustainable economic growth. The key implications are discussed as follows:

The operations of listed food retail stores directly contribute to the GDP of the SADC region. Therefore, retail establishments with stronger financial health can draw in both domestic and foreign investment, boosting the local economy and fostering regional development. Listed food retail companies in the SADC region employ a large number of people. Thus, sound financial health enables them to grow, adding to their workforce and lowering unemployment, which is an issue currently facing many SADC countries due to economic challenges. Retail establishments with sound financial health are better able to provide goods and services, which boosts customer spending that uplifts other economic sectors. More options and reduced costs for customers can result from lucrative and efficient retail operations, enhancing customers' quality of life. Well-grounded retail companies can support local businesses and entrepreneurship by investing in the marketing and distribution of locally produced goods. Likewise, increased retail development can promote balanced regional development by igniting growth in both urban and rural areas.

Taxes collected from financially healthy retail establishments go towards funding government programmes. This means that more tax collection can be allocated to infrastructure and public services, advancing larger objectives of economic development. Prosperous retail enterprises have the potential to engage in capital markets, hence supporting the development of financial markets within the area.

Retailers in good financial standing have a potential to invest in e-commerce platforms, such as advanced technologies, to expand their market share or presence and boost productivity throughout the region and beyond. Financially sound retail companies can also lessen poverty in the SADC areas by fostering local industry and generating jobs. By providing opportunities to small and medium-sized businesses and encouraging economic engagement across various demographic groups, the retail industry can support inclusive growth.

8.2.2 Contribution of the study to the literature

The study provides specific insights into the financial health of listed food retail companies within the SADC region, an area that is underrepresented in global financial health studies. This regional focus helps fill a gap in the literature by offering detailed analysis pertinent to the SADC context. By concentrating on listed food retail

companies, the study narrows down the focus to provide strategic insights that are highly relevant for stakeholders in the food retail industry. This can assist differentiate the sector-specific financial dynamics from those of other industries, thereby contributing to the literature by validating the applicability of these financial metrics within the SADC context. It also offers potential adaptations to better align these metrics with the regional economic environment, thereby enhancing evaluation of financial health of the listed food retail companies.

Unlike the previous studies, the originality of the current study includes unique methodology employed which involved quantitative research using financial statements and integrated reports as primary data sources. The study covered a critical period in the SADC economy from 1994 to 2022. This period includes South Africa's economic transformation starting in 1994, the global financial crisis of 2008, the COVID-19 pandemic in 2020 and subsequent economic turbulence related to the conflicts involving Ukraine and Russia. The study examined financial health by exploring the relationships between financial health, measured by ROCE, and macroeconomic, internal, and industry-specific factors, focusing on the SADC region. A conceptual framework was developed, as shown in Figure 8.1, emphasizing the comprehensive integration of these factors as key determinants of financial health for listed retail companies. Moreover, this research is the first to establish that only open systems theory, financial analysis theories, value-chain theory, and agency theory are capable of driving the financial health of listed retail companies within the SADC region. Moreover, it is the first study to utilize data from MacGregor financial statements, the IMF, and internet sources covering the period from 1994 to 2022. Exclusively, it evaluates the relationship between macroeconomic, internal, and industry-specific factors and the financial health of listed retail companies in the SADC region using advanced econometric techniques such as Fixed and Random Effects models, PCSEs, and FGLS using the diagnostic tests such as cross-section independence, the Kao test, unit-root tests and Breusch–Pagan tests, an approach that has not been applied in previous studies.

8.2.3 Proposed conceptual framework

Building upon the key research findings of this study, an integrated conceptual framework, as shown in Figure 8.1, is proposed to comprehensively understand the

strategic interrelationships among macroeconomic factors, internal factors and industry-specific factors influencing the financial health of listed food retail companies in the SADC region.

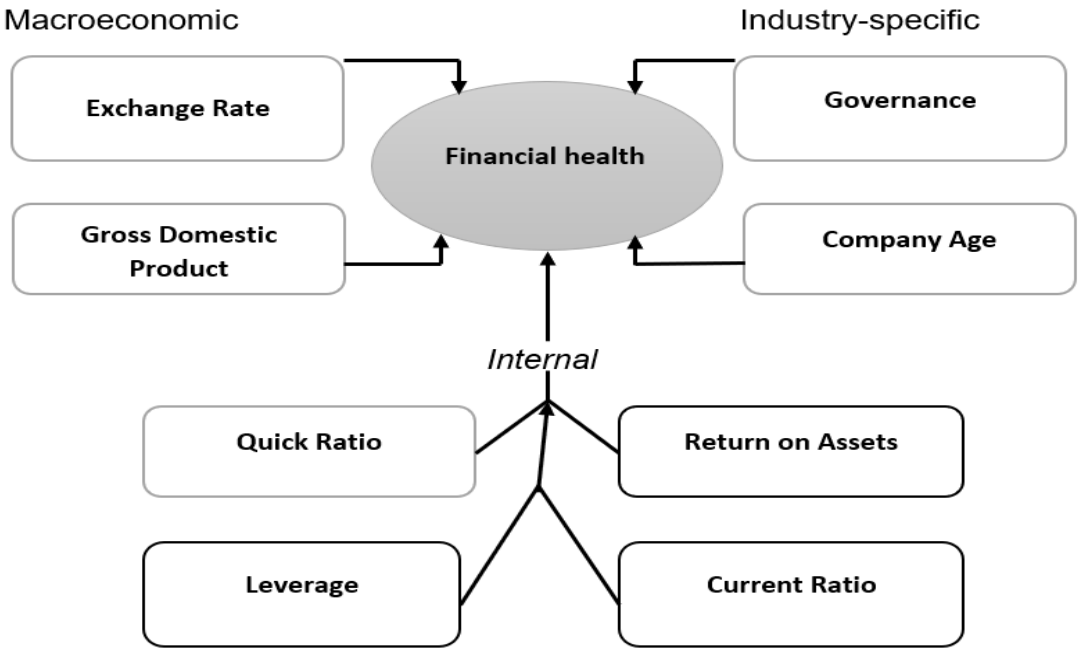

Figure 8. 1: Proposed conceptual framework for factors influencing financial health
Source: Self-generated

The model is:

$Y_{it} = f(X_{it})$……..(8.1)

Where, Y_{it} represents a response variable which in this study is the return of capital employed (ROCE).

X_{it} represents regressors, which are macroeconomic factors, internal factors, and industry-specific factors.

Macroeconomic factors are categorized into exchange rate (ER) and gross domestic product (GDP). Industry-specific factors are divided into size of the board of directors (GV) and company age (AGE). The internal factor is also divided into two, asset turnover ratio (ATR) and Stock or Inventory Turnover (ST).

Therefore,

$$ROCE_{it} = c_0 + \beta_1 \sum_{i=1}^{n} ATR_{it} - \beta_2 \sum_{i=1}^{n} ST_{it} + \beta_3 \sum_{i=1}^{n} ER_{it} - \beta_4 \sum_{i=1}^{n} GDP_{it} + \beta_5 \sum_{i=1}^{n} AGE_{it} - \beta_6 \sum_{i=1}^{n} GV_{it} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots (8.2)$$

And the $a\ priori$ expectation is that $\beta_1, \beta_3, \beta_5 > 0, \beta_2, \beta_4, \beta_6 < 0$.

Macroeconomic factors

Exchange rate (ER)

A company's financial health may be impacted by fluctuations in exchange rates, particularly if it engages in international trade or has exposure to foreign currencies.

Gross domestic product (GDP)

Business performance is impacted by a nation's overall economic health, which is measured by GDP. A thriving economy is generally indicated by an increasing GDP and this can benefit businesses financially.

It is believed that the financial strategies, including hedging can mitigate exchange rate problems. A rising GDP, indicative of a thriving economy, suggests that businesses should capitalise on growth opportunities and invest in expansion to maximise financial benefits. Adapting to these economic indicators allows companies to enhance their stability and leverage economic conditions for sustained growth. These assumptions align with the open systems theory.

Industry-specific factors

Governance (G)

A company's financial health can be improved by implementing effective corporate governance standards, which can also boost investor confidence and financial stability.

Company age (AGE)

A company's age can reveal a lot about its stability and experience. The financial health of older, more established businesses may be stronger than that of younger, less established businesses.

Implementing effective corporate governance standards can enhance a company's financial health, boost investor confidence and ensure financial stability. Moreover, a company's age indicates its stability and experience, with older, established businesses generally exhibiting stronger financial health compared to younger, less established ones. The study's findings are consistent with the principles of the value chain theory and the agency theory.

Internal factors

Quick ratio (QR)

The QR measures a company's ability to cover its short-term liabilities using its most liquid assets. A higher QR signifies stronger financial health.

Leverage (Lev)

The amount of debt a business utilises to finance its assets is referred to as leverage. Lev can be a sign of increased risk, which could have an impact on a company's financial stability.

Return on assets (ROA)

Return on Assets (ROA) reflects how effectively a company utilizes its resources to generate profits. A higher ROA suggests improved financial health.

Current ratio (CR)

Another liquidity metric is the current ratio, which contrasts the current assets and current liabilities of an organisation. A higher current ratio indicated better financial health.

The internal factors postulate that during economic downturns, heightened debt borrowings negatively impact financial health, while increases in the QR and ROA enhance it. The model also indicates that an increase in the CR adversely affects financial health due to capital being tied up in inventory, which incurs significant maintenance costs over an uncertain holding period. This suggests that diminished consumer spending, coupled with stagnant inventory and underutilised assets, deteriorates financial health. The framework aligns with established principles of the financial analysis theory. Therefore, the listed food retail companies' financial health is

influenced by all of these variables combined, as the framework's central oval illustrates. From this, stakeholders can gain a thorough understanding of a company's financial health by examining these variables.

8.2.3 Policy recommendations

Based on the study's recommended conceptual framework, the following policy recommendations are put forward:

Macroeconomic policies

- Businesses engaged in international trade can lower uncertainty and financial risk by putting policies in place to stabilise exchange rates.
- Government programmes to increase GDP by funding technology, infrastructure and education can improve the business climate and consequently the financial health of enterprises.

Industry-specific policies

- Encouraging or requiring more stringent corporate governance procedures can enhance accountability, transparency and general management in businesses. Regulations and rules pertaining to shareholder rights, audit procedures and board composition can help achieve this.
- Stability and longevity can be achieved by implementing policies that assist companies at various phases of their lifespan. For instance, grants, tax breaks, or simpler loan approval procedures to new and small enterprises might aid in their development and establishment.

Internal factors

- Encouraging businesses to use sound financial management techniques to maintain good liquidity ratios (QR and CR). These may include policies for short-term borrowing, inventory control and cash management.
- Giving businesses advice on prudent leverage practices to help them stay out of debt traps. Promoting equity financing accessibility and offering advice on the best capital structures can help with this.

- Putting in place training and development initiatives to raise ROA by enhancing asset utilisation efficiency. This can involve making technological investments, training staff members and streamlining processes.
- Implementation of these policies may involve creating laws and rules that impose sound principles in risk management, financial reporting and governance. Establishing monetary rewards to entice businesses to use best practices, such as grants, tax breaks, or subsidies and giving managers and firm executives access to materials and instruction on efficient operations, good financial management and good governance.

8.2.4 LIMITATIONS OF THE STUDY

During the study period from 1994 to 2022, a total of 4 590 outlets were identified in the SADC region, with 2 787 belonging to Shoprite Holdings Ltd, 1 020 to SPAR Group Ltd, 2 080 to Pick n Pay and 783 to Woolworths Holdings Ltd. Despite these outlets being distributed across 16 SADC countries, financial statements were not presented on a country-by-country basis; instead, disclosure occurred at the holding company level, all of which were based in South Africa. Thus, there were four holding companies: Shoprite Holdings Ltd, SPAR Group Ltd, Pick n Pay and Woolworths Holdings Ltd, all of which had listed shares and reported their financial statements to the JSE. Thus, the researcher was able to access their data from the McGregor BFA Library online database. As per listing requirements, the financial statements of the four holding companies underwent an auditing process before publication, rendering them reliable sources of information for this study. However, the data were incomplete as some variables were not adequately disclosed. Nevertheless, these limitations do not undermine the robustness and accuracy of the study's findings, as reliable and robust inferential and diagnosis tests were used.

8.2.5 Suggestions for further research

The study establishes a foundation for future research on the financial health of listed food retail companies in the SADC region. Therefore, future research should investigate the determinants of financial health using the proposed model, as it has been shown to affect the financial health of listed food retail companies in the SADC region. However, alternative models for determining financial health, such as the RBV and the market risk theory, could be used. In similar studies, researchers may consider using different response variables, such as ROA, net profit, sales revenue, ROE, ROI

and others mentioned in the literature review, to examine their regressors. This would allow for comparisons between the findings of future studies and those of the current study. Lastly, future research could expand the scope of this study by incorporating the impact of technological advancements and utilising data from a broader range of food retail businesses. This would provide a more comprehensive understanding of the determinants of financial health across the global food retail sector.

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APPENDICES

APPENDIX 1

STUDY DATA

Macroeconomic factors

FIRM STICKER	id	YEAR	ROCE	CPI	IR	ER	GDP
SPT	1	1994	1.23%	9.83	8.90	3.5475	2.40
SPT	1	1995	1.39%	8.73	8.68	3.6319	3.10
SPT	1	1996	0.99%	25.90	7.35	4.2944	5.00
SPT	1	1997	0.99%	11.10	8.60	4.6094	2.50
SPT	1	1998	0.70%	8.60	6.88	5.5487	1.20
SPT	1	1999	0.85%	8.60	5.18	6.1221	1.30
SPT	1	2000	17.43%	8.95	5.34	6.9554	3.50
SPT	1	2001	15.75%	8.30	5.70	8.6167	4.00
SPT	1	2002	19.19%	9.47	9.49	10.539	3.60
SPT	1	2003	17.78%	5.84	5.68	7.5843	4.60
SPT	1	2004	15.67%	-0.68	-0.69	6.4616	5.10
SPT	1	2005	10.83%	2.06	2.06	6.3806	5.00
SPT	1	2006	0.83%	3.24	3.24	6.7796	6.00
SPT	1	2007	10.38%	6.17	8.90	7.0625	6.80
SPT	1	2008	8.02%	10.04	13.40	8.264	5.10
SPT	1	2009	5.79%	6.30	10.80	8.444	2.00
SPT	1	2010	6.29%	6.30	7.00	7.3324	4.50
SPT	1	2011	7.25%	8.00	7.50	7.2702	4.20
SPT	1	2012	3.79%	8.20	8.70	8.2206	4.50
SPT	1	2013	-2.41%	5.80	7.00	9.6588	4.00
SPT	1	2014	-0.27%	5.40	6.30	10.8605	3.50
SPT	1	2015	24.76%	9.10	6.70	12.7721	2.20
SPT	1	2016	8.74%	12.70	11.10	14.7129	1.50
SPT	1	2017	0.52%	10.00	10.70	13.3209	2.10
SPT	1	2018	1.95%	7.80	8.70	13.2471	-3.10
SPT	1	2019	4.82%	18.60	11.30	14.4566	2.10
SPT	1	2020	-1.06%	45.50	37.00	16.4651	4.80
SPT	1	2021	1.88%	16.90	7.25	14.7955	4.70
SPT	1	2022	4.34%	13.36	10.5	16.3739	3.80
PnP	2	1994	4.67%	9.83	8.9	3.5475	2.40
PnP	2	1995	5.96%	8.73	8.68	3.6319	3.10
PnP	2	1996	5.38%	25.9	7.35	4.2944	5.00
PnP	2	1997	5.45%	11.10	8.6	4.6094	2.50
PnP	2	1998	5.79%	8.60	6.88	5.5487	1.20
PnP	2	1999	6.40%	8.60	5.18	6.1221	1.30
PnP	2	2000	4.67%	8.95	5.34	6.9554	3.50
PnP	2	2001	2.07%	8.30	5.7	8.6167	4.00
PnP	2	2002	2.32%	9.47	9.49	10.539	3.60
PnP	2	2003	4.70%	5.84	5.68	7.5843	4.60
PnP	2	2004	1.35%	-0.68	-0.69	6.4616	5.10

PnP	2	2005	-8.61%	2.06	2.06	6.3806	5.00
PnP	2	2006	2.28%	3.24	3.24	6.7796	6.00
PnP	2	2007	4.75%	6.17	8.90	7.0625	6.80
PnP	2	2008	10.34%	10.04	13.40	8.264	5.10
PnP	2	2009	38.37%	6.30	10.80	8.444	2.00
PnP	2	2010	36.65%	6.30	7.00	7.3324	4.50
PnP	2	2011	256.16%	8.00	7.50	7.2702	4.20
PnP	2	2012	465.52%	8.20	8.70	8.2206	4.50
PnP	2	2013	133.57%	5.80	7.00	9.6588	4.00
PnP	2	2014	129.62%	5.40	6.30	10.8605	3.50
PnP	2	2015	181.09%	9.10	6.70	12.7721	2.20
PnP	2	2016	209.45%	12.70	11.10	14.7129	1.50
PnP	2	2017	222.99%	10.00	10.70	13.3209	2.10
PnP	2	2018	227.88%	7.80	8.70	13.2471	-3.10
PnP	2	2019	272.63%	18.60	11.30	14.4566	2.10
PnP	2	2020	69.45%	45.50	37.00	16.4651	4.80
PnP	2	2021	5.46%	16.90	7.25	14.7955	4.70
PnP	2	2022	69.91%	13.36	10.50	16.3739	3.80
SP	3	1994	4.67%	9.83	8.9	3.5475	2.40
SP	3	1995	5.96%	8.73	8.68	3.6319	3.10
SP	3	1996	5.38%	25.9	7.35	4.2944	5.00
SP	3	1997	5.45%	11.10	8.60	4.6094	2.50
SP	3	1998	5.79%	8.60	6.88	5.5487	1.20
SP	3	1999	6.40%	8.60	5.18	6.1221	1.30
SP	3	2000	4.67%	8.95	5.34	6.9554	3.50
SP	3	2001	2.07%	8.30	5.70	8.6167	4.00
SP	3	2002	2.32%	9.47	9.49	10.539	3.60
SP	3	2003	4.70%	5.84	5.68	7.5843	4.60
SP	3	2004	1.35%	-0.68	-0.69	6.4616	5.10
SP	3	2005	-8.61%	2.06	2.06	6.3806	5.00
SP	3	2006	2.28%	3.24	3.24	6.7796	6.00
SP	3	2007	4.75%	6.17	8.90	7.0625	6.80
SP	3	2008	10.34%	10.04	13.40	8.264	5.10
SP	3	2009	3.33%	6.30	10.80	8.444	2.00
SP	3	2010	36.91%	6.30	7.00	7.3324	4.50
SP	3	2011	33.57%	8.00	7.50	7.2702	4.20
SP	3	2012	3.57%	8.20	8.70	8.2206	4.50
SP	3	2013	4.29%	5.80	7.00	9.6588	4.00
SP	3	2014	5.27%	5.40	6.3	10.8605	3.50
SP	3	2015	29.76%	9.10	6.7	12.7721	2.20
SP	3	2016	37.41%	12.70	11.1	14.7129	1.50
SP	3	2017	6.43%	10.00	10.7	13.3209	2.10
SP	3	2018	6.25%	7.80	8.7	13.2471	-3.10
SP	3	2019	5.18%	18.60	11.30	14.4566	2.10
SP	3	2020	4.84%	45.50	37.00	16.4651	4.80
SP	3	2021	3.86%	16.90	7.25	14.7955	4.70
SP	3	2022	3.46%	13.36	10.5	16.3739	3.80
WLW	4	1994	36.06%	9.83	8.9	3.5475	2.40
WLW	4	1995	46.14%	8.73	8.68	3.6319	3.10

WLW		4	1996	43.57%	25.90	7.35	4.2944	5.00
WLW		4	1997	41.78%	11.10	8.6	4.6094	2.50
WLW		4	1998	42.63%	8.60	6.88	5.5487	1.20
WLW		4	1999	0.71%	8.60	5.18	6.1221	1.30
WLW		4	2000	39.47%	8.95	5.34	6.9554	3.50
WLW		4	2001	1.10%	8.30	5.7	8.6167	4.00
WLW		4	2002	1.95%	9.47	9.49	10.539	3.60
WLW		4	2003	2.31%	5.84	5.68	7.5843	4.60
WLW		4	2004	2.36%	-0.68	-0.69	6.4616	5.10
WLW		4	2005	25.54%	2.06	2.06	6.3806	5.00
WLW		4	2006	21.68%	3.24	3.24	6.7796	6.00
WLW		4	2007	30.71%	6.17	8.90	7.0625	6.80
WLW		4	2008	2.53%	10.04	13.40	8.264	5.10
WLW		4	2009	38.11%	6.30	10.80	8.444	2.00
WLW		4	2010	7.43%	6.30	7.00	7.3324	4.50
WLW		4	2011	8.81%	8.00	7.50	7.2702	4.20
WLW		4	2012	12.60%	8.20	8.70	8.2206	4.50
WLW		4	2013	10.56%	5.80	7.00	9.6588	4.00
WLW		4	2014	11.44%	5.40	6.3	10.8605	3.50
WLW		4	2015	1.94%	9.10	6.7	12.7721	2.20
WLW		4	2016	2.01%	12.70	11.10	14.7129	1.50
WLW		4	2017	2.64%	10.00	10.7	13.3209	2.10
WLW		4	2018	-2.43%	7.80	8.7	13.2471	-3.10
WLW		4	2019	-4.29%	18.60	11.30	14.4566	2.10
WLW		4	2020	11.35%	45.50	37.00	16.4651	4.80
WLW		4	2021	10.18%	16.90	7.25	14.7955	4.70
WLW		4	2022	11.97%	13.36	10.50	16.3739	3.80

Internal factors

FIRM STICKER	id	YEAR	ROCE	QR	ROA	CR	LEV	TATR	ST
SPT	1	1994	1.23%	0.35	0.34%	0.91	0.79	4.07	0.00
SPT	1	1995	1.39%	0.40	0.39%	0.92	0.77	3.79	0.00
SPT	1	1996	0.99%	0.88	0.27%	0.92	0.82	4.20	0.00
SPT	1	1997	0.99%	0.37	0.29%	0.90	0.77	3.77	16.16
SPT	1	1998	0.70%	0.39	0.18%	0.96	0.77	3.04	8.35
SPT	1	1999	0.85%	0.45	0.19%	0.98	0.78	3.35	7.54
SPT	1	2000	17.43%	0.48	5.62%	1.08	0.74	3.58	7.54
SPT	1	2001	15.75%	0.01	145.48%	0.04	23.82	101.41	184.06
SPT	1	2002	19.19%	0.01	168.47%	0.04	24.01	112.41	191.94
SPT	1	2003	17.78%	0.01	163.31%	0.04	23.36	114.95	190.58
SPT	1	2004	15.67%	0.02	179.60%	0.03	27.70	128.07	231.75
SPT	1	2005	10.83%	0.02	178.30%	0.02	36.49	170.06	418.31
SPT	1	2006	0.83%	0.02	17.38%	0.02	37.53	183.44	1210.89
SPT	1	2007	10.38%	0.01	197.11%	0.02	38.04	196.56	1251.82
SPT	1	2008	8.02%	0.00	187.80%	0.00	41.49	197.06	695.78
SPT	1	2009	5.79%	3.42	4.93%	5.18	0.19	1.87	0.12
SPT	1	2010	6.29%	3.90	5.38%	5.28	0.19	0.17	3.51
SPT	1	2011	7.25%	-1.07	6.28%	0.56	0.18	1.66	3.91

SPT	1	2012	3.79%	5.43	34.18%	7.33	1.47	16.13	3.70
SPT	1	2013	-2.41%	2.73	-2.09%	4.79	0.18	1.49	3.08
SPT	1	2014	-0.27%	1.74	-0.23%	3.72	0.19	1.66	2.93
SPT	1	2015	24.76%	2.43	3.61%	4.04	0.20	1.58	2.97
SPT	1	2016	8.74%	2.19	1.24%	3.27	0.23	1.57	3.79
SPT	1	2017	0.52%	1.97	0.44%	3.62	0.21	1.60	0.03
SPT	1	2018	1.95%	-1.28	1.64%	0.34	0.22	1.68	0.32
SPT	1	2019	4.82%	1.13	4.14%	2.59	0.34	1.40	3.34
SPT	1	2020	-1.06%	1.34	-5.46%	1.41	6.79	7.39	5.76
SPT	1	2021	1.88%	0.91	1.51%	1.47	0.62	0.69	4.85
SPT	1	2022	4.34%	1.46	34.06%	1.53	5.92	7.37	5.79
PnP	2	1994	4.67%	2.53	3.78%	5.23	0.17	1.38	0.00
PnP	2	1995	5.96%	2.16	4.79%	5.05	0.17	1.42	0.00
PnP	2	1996	5.38%	2.11	4.39%	5.11	0.16	1.46	0.00
PnP	2	1997	5.45%	2.53	4.45%	4.85	0.17	1.36	2.40
PnP	2	1998	5.79%	2.86	4.77%	5.33	0.15	1.31	2.50
PnP	2	1999	6.40%	2.35	51.99%	4.54	1.78	13.39	3.04
PnP	2	2000	4.67%	-2.11	3.88%	0.49	0.17	1.47	3.17
PnP	2	2001	2.07%	2.11	1.76%	5.39	0.15	1.45	0.28
PnP	2	2002	2.32%	2.19	1.99%	5.76	0.14	1.68	0.31
PnP	2	2003	4.70%	1.53	3.87%	4.69	0.18	1.63	2.44
PnP	2	2004	1.35%	2.88	1.14%	5.15	0.16	1.80	0.31
PnP	2	2005	-8.61%	3.03	-7.20%	4.43	0.20	1.78	3.83
PnP	2	2006	2.28%	48.80	1.97%	50.36	0.07	0.17	9.91
PnP	2	2007	4.75%	3.51	3.86%	5.15	0.15	1.97	11.40
PnP	2	2008	10.34%	-1.20	8.73%	0.49	0.20	1.88	4.51
PnP	2	2009	38.37%	0.39	11.03%	0.83	0.84	4.71	8.29
PnP	2	2010	36.65%	0.39	11.57%	0.83	0.81	4.94	13.38
PnP	2	2011	256.16%	0.51	8119.07%	0.93	80.07	465.05	13.21
PnP	2	2012	465.52%	0.43	64.36%	0.86	0.80	4.99	0.14
PnP	2	2013	133.57%	0.41	42.14%	0.85	0.81	4.55	13.30
PnP	2	2014	129.62%	0.46	41.23%	0.87	0.81	4.47	13.06
PnP	2	2015	181.09%	0.42	58.59%	0.88	0.79	4.55	12.74
PnP	2	2016	209.45%	0.38	64.24%	0.84	0.76	4.37	12.13
PnP	2	2017	222.99%	0.35	68.69%	0.83	0.77	4.28	11.40
PnP	2	2018	227.88%	0.35	68.30%	0.80	0.79	4.30	11.09
PnP	2	2019	272.63%	0.43	83.08%	0.84	0.78	4.45	12.27
PnP	2	2020	69.45%	0.39	35.66%	0.79	0.91	2.66	11.73
PnP	2	2021	5.46%	0.47	2.56%	0.83	0.91	2.46	10.89
PnP	2	2022	69.91%	0.48	30.10%	0.84	0.91	2.43	10.27
SP	3	1994	4.67%	2.53	37.82%	5.23	1.67	13.76	0.00
SP	3	1995	5.96%	2.16	4.79%	5.05	0.17	1.42	0.00
SP	3	1996	5.38%	2.11	4.39%	5.11	0.16	1.46	0.00
SP	3	1997	5.45%	2.53	4.45%	4.85	0.17	1.36	2.40
SP	3	1998	5.79%	2.86	4.77%	5.33	0.15	1.31	2.50
SP	3	1999	6.40%	2.35	51.99%	4.54	1.78	13.39	3.04
SP	3	2000	4.67%	-2.11	3.88%	0.49	0.17	1.47	3.17
SP	3	2001	2.07%	2.11	1.76%	5.39	0.15	1.45	0.28
SP	3	2002	2.32%	2.19	1.99%	5.76	0.14	1.68	0.31

SP	3	2003	4.70%	1.53	3.87%	4.69	0.18	1.63	2.44
SP	3	2004	1.35%	2.88	1.14%	5.15	0.16	1.80	0.31
SP	3	2005	-8.61%	3.03	-7.20%	4.43	0.20	1.78	3.83
SP	3	2006	2.28%	48.80	1.97%	50.36	0.07	0.17	9.91
SP	3	2007	4.75%	3.51	3.86%	5.15	0.15	1.97	11.40
SP	3	2008	10.34%	3.22	8.73%	4.91	0.20	1.88	4.51
SP	3	2009	3.33%	3.42	2.84%	5.18	0.19	1.87	4.14
SP	3	2010	36.91%	3.90	31.55%	5.28	0.19	0.17	3.51
SP	3	2011	33.57%	-1.07	29.09%	0.56	0.18	1.66	3.91
SP	3	2012	3.57%	5.43	32.19%	7.33	1.47	16.13	3.70
SP	3	2013	4.29%	2.73	3.72%	4.79	0.18	1.49	3.08
SP	3	2014	5.27%	1.74	4.53%	3.72	0.19	1.66	2.93
SP	3	2015	29.76%	2.43	4.34%	4.04	0.20	1.58	2.97
SP	3	2016	37.41%	2.19	5.31%	3.27	0.23	1.57	3.79
SP	3	2017	6.43%	1.97	5.51%	3.62	0.21	1.60	0.03
SP	3	2018	6.25%	-1.28	5.24%	0.34	0.22	1.68	0.32
SP	3	2019	5.18%	1.13	4.45%	2.59	0.34	1.40	3.34
SP	3	2020	4.84%	1.34	24.96%	1.41	6.79	7.39	5.76
SP	3	2021	3.86%	0.91	3.08%	1.47	0.62	0.69	4.85
SP	3	2022	3.46%	1.46	27.17%	1.53	5.92	7.37	5.79
WLW	4	1994	36.06%	-2.79	3.78%	0.52	0.19	0.14	0.00
WLW	4	1995	46.14%	-2.39	4.79%	0.51	0.20	0.14	0.00
WLW	4	1996	43.57%	-2.49	4.39%	0.51	0.18	0.15	0.00
WLW	4	1997	41.78%	44.69	442.81%	45.22	19.69	13.48	2.05
WLW	4	1998	42.63%	64.17	4.77%	64.74	0.18	0.13	1.95
WLW	4	1999	0.71%	52.86	0.70%	53.34	1.96	1.34	2.40
WLW	4	2000	39.47%	0.12	3.88%	0.61	0.18	0.15	2.83
WLW	4	2001	1.10%	1.98	0.77%	2.02	0.39	1.99	41.67
WLW	4	2002	1.95%	1.79	1.29%	1.82	0.42	0.60	6.59
WLW	4	2003	2.31%	0.24	1.04%	0.81	0.69	0.45	1.67
WLW	4	2004	2.36%	85.41	1.12%	85.98	0.15	0.45	20.69
WLW	4	2005	25.54%	0.29	0.93%	0.81	0.46	0.36	2.19
WLW	4	2006	21.68%	0.37	76.02%	0.85	3.97	2.83	2.25
WLW	4	2007	30.71%	1.48	104.07%	1.76	4.33	1.79	1.59
WLW	4	2008	2.53%	0.58	8.45%	1.00	3.05	1.93	1.75
WLW	4	2009	38.11%	1.09	15.17%	1.68	0.38	0.25	1.56
WLW	4	2010	7.43%	0.88	14.07%	1.28	1.98	25.96	16.56
WLW	4	2011	8.81%	0.87	18.17%	1.41	2.00	28.22	17.89
WLW	4	2012	12.60%	0.66	142.00%	1.17	11.08	197.27	17.43
WLW	4	2013	10.56%	0.56	2.16%	1.22	0.19	2.89	17.30
WLW	4	2014	11.44%	1.02	1.34%	1.05	0.69	1.78	14.92
WLW	4	2015	1.94%	0.01	0.75%	0.05	0.48	1.36	16.58
WLW	4	2016	2.01%	-0.03	88.14%	0.01	41.33	1.32	11.72
WLW	4	2017	2.64%	0.63	1.21%	0.67	0.37	1.50	10.42
WLW	4	2018	-2.43%	0.71	-0.88%	0.76	0.41	1.71	1.01
WLW	4	2019	-4.29%	69.81	-0.30%	75.06	0.05	2.03	10.78
WLW	4	2020	11.35%	0.36	0.86%	0.38	0.72	1.11	10.26
WLW	4	2021	10.18%	0.47	0.75%	0.49	0.62	1.41	11.19
WLW	4	2022	11.97%	51.05	0.66%	53.97	0.06	0.02	10.86

Industry-specific factors

FIRM STICKER	id	YEAR	ROCE	SIZE	AGE	CC	SC	MC	GOV	SE
SPT	1	1994	1%	1349254	15	5495408	483528	0	10	0
SPT	1	1995	1%	1677237	16	6363643	528304	0	11	0
SPT	1	1996	1%	2425432	17	10183256	863418	0	13	0
SPT	1	1997	1%	2481292	18	9365493	726722	0	13	1000
SPT	1	1998	1%	4760191	19	14476324	1065968	0	12	1000
SPT	1	1999	1%	5153945	20	17245920	1489803	0	13	1000
SPT	1	2000	17%	5143627	21	18430568	1631805	0	14	0
SPT	1	2001	16%	193246	22	19596729	1689647	0	13	0
SPT	1	2002	19%	196681	23	22109797	1821281	0	14	0
SPT	1	2003	18%	217231	24	24971333	2017815	0	13	0
SPT	1	2004	16%	208028	25	26641233	2273837	0	12	0
SPT	1	2005	11%	175309	26	29812886	2534855	0	12	0
SPT	1	2006	1%	182686	27	33511287	2815830	0	18	0
SPT	1	2007	10%	198157	28	38949845	3100627	0	18	0
SPT	1	2008	8%	241813	29	47651548	3655978	0	18	0
SPT	1	2009	6%	262446	30	491023	4453771	0	15	123
SPT	1	2010	6%	290294	31	48085	5273843	0	15	133
SPT	1	2011	7%	327435	32	544682	5762045	0	15	133
SPT	1	2012	4%	32899	33	530593	6530468	0	18	133
SPT	1	2013	-2%	319359	34	474438	7195133	0	18	11860
SPT	1	2014	0%	296856	35	492079	7723	0	18	1.18E+08
SPT	1	2015	25%	327101	36	516086	8507	0	18	9250
SPT	1	2016	9%	341532	37	537588	9499	215	17	109
SPT	1	2017	1%	330615	38	528759	10498	2244	15	857706
SPT	1	2018	2%	349016	39	587632	10851	2385	12	13910
SPT	1	2019	5%	486491	40	678873	11997	2525	9	96
SPT	1	2020	-1%	78362	41	578746	12492	2326	11	136
SPT	1	2021	2%	719766	42	494305	13553	2872	14	412
SPT	1	2022	4%	81278	43	598839	14788	0	14	492
PnP	2	1994	5%	122391	28	168448	0	0	14	0
PnP	2	1995	6%	136278	29	194053	0	0	14	0
PnP	2	1996	5%	147744	30	215381	0	0	14	0
PnP	2	1997	5%	164009	31	222281	0	0	14	0
PnP	2	1998	6%	177313	32	231914	0	0	14	0
PnP	2	1999	6%	19301	33	258415	0	0	14	0
PnP	2	2000	5%	196628	35	289104	0	0	14	0
PnP	2	2001	2%	193246	34	281133	0	0	14	0
PnP	2	2002	2%	196681	35	331347	0	0	14	0
PnP	2	2003	5%	217231	36	354764	0	0	14	0
PnP	2	2004	1%	208028	37	373612	0	0	14	0
PnP	2	2005	-9%	175309	38	312569	0	0	14	0
PnP	2	2006	2%	182686	39	31757	65601	0	14	0
PnP	2	2007	5%	198157	40	390594	73797	0	15	0
PnP	2	2008	10%	241813	41	454126	76333	0	15	0
PnP	2	2009	38%	105762	42	498621	46240	0	16	665076
PnP	2	2010	37%	111992	43	553143	49256	0	147	738606
PnP	2	2011	256%	1117	44	519458	43198	544	25	516933

PnP	2	2012	466%	118187	45	589842	46585	0	16	433599
PnP	2	2013	134%	130215	46	592713	49520	0	13	312759
PnP	2	2014	130%	141046	47	631170	53263	0	15	331455
PnP	2	2015	181%	147065	48	669408	56538	0	15	491169
PnP	2	2016	209%	165849	49	724451	60606	1262	15	607278
PnP	2	2017	223%	181024	50	774861	66198	3454	16	708795
PnP	2	2018	228%	189805	51	815601	66887	4234	16	738891
PnP	2	2019	273%	198543	52	882932	71020	3112	16	940215
PnP	2	2020	69%	335053	53	892815	740	0	19	680979
PnP	2	2021	5%	378165	54	930788	79590	0	18	551247
PnP	2	2022	70%	403445	55	978728	78363	1142	17	692265
SP	3	1994	5%	12239	62	168448	0	0	9	4629
SP	3	1995	6%	136278	63	194053	0	0	9	6534
SP	3	1996	5%	147744	64	215381	0	0	9	6488
SP	3	1997	5%	164009	65	222281	0	0	9	7302
SP	3	1998	6%	177313	66	231914	0	0	9	8458
SP	3	1999	6%	19301	67	258415	0	835.00	9	10035
SP	3	2000	5%	196628	68	289104	0	227.00	9	7624
SP	3	2001	2%	193246	69	281133	0	0	9	3408
SP	3	2002	2%	196681	70	331347	26138	0	9	3915
SP	3	2003	5%	217231	71	354764	24150	0	9	8406
SP	3	2004	1%	208028	72	373612	406707	221427.00	9	2363
SP	3	2005	-9%	175309	73	312569	436300	206897.00	9	0
SP	3	2006	2%	182686	74	31757	65601	2582.00	10	3608
SP	3	2007	5%	198157	75	390594	73797	3371.00	11	7644
SP	3	2008	10%	241813	76	454126	76333	3789.00	11	21102
SP	3	2009	3%	262446	77	491023	79390	4254.00	11	745
SP	3	2010	37%	290294	78	48085	8630	4347.00	11	9158
SP	3	2011	34%	327435	79	544682	99760	5952.00	11	9526
SP	3	2012	4%	32899	80	530593	11274	6740.00	11	1059
SP	3	2013	4%	319359	81	474438	12231	7534.00	11	1187
SP	3	2014	5%	296856	82	492079	14072	9720.00	12	1345
SP	3	2015	30%	327101	83	516086	0	12961.00	11	1421
SP	3	2016	37%	341532	84	537588	0	28957.00	12	1815
SP	3	2017	6%	330615	85	528759	41796	45784.00	10	18206
SP	3	2018	6%	349016	86	587632	44124	47630.00	9	18272
SP	3	2019	5%	486491	87	678873	48879	51212.00	9	21634
SP	3	2020	5%	78362	88	578746	62789	68381.00	6	19562
SP	3	2021	4%	719766	89	494305	65893	65980.00	8	22198
SP	3	2022	3%	81278	90	598839	67696	69718.00	9	22085
WLW	4	1994	36%	1223910	63	168448	0	0	10	0
WLW	4	1995	46%	1362780	64	194053	0	0	10	0
WLW	4	1996	44%	1477440	65	215381	0	0	10	0
WLW	4	1997	42%	16490	66	222281	0	0	10	0
WLW	4	1998	43%	1773130	67	231914	0	0	10	0
WLW	4	1999	1%	193010	68	258415	0	0	10	0
WLW	4	2000	39%	1966280	69	289104	0	0	10	0
WLW	4	2001	1%	373130	70	741110	105080	0	10	0
WLW	4	2002	2%	406380	71	244730	123870	0	10	0
WLW	4	2003	2%	588640	72	263214	5566	0	7	0

WLW	4	2004	2%	614540	73	279339	5997	0	7	0
WLW	4	2005	26%	877510	74	313525	372480	0	8	0
WLW	4	2006	22%	133464	75	377342	442540	0	8	0
WLW	4	2007	31%	104425	76	186419	212930	0	7	0
WLW	4	2008	3%	112680	77	217536	256060	0	7	0
WLW	4	2009	38%	830510	78	211750	268810	0	12	0
WLW	4	2010	7%	9010	79	233930	2858	0	14	0
WLW	4	2011	9%	9065	80	255820	3166	370	14	0
WLW	4	2012	13%	1450	81	286040	3478	438	15	0
WLW	4	2013	11%	121880	82	352270	4636	500	16	0
WLW	4	2014	11%	222690	83	397070	0	0	12	0
WLW	4	2015	2%	414550	84	565060	8363	0	15	0
WLW	4	2016	2%	4939	85	6540	9859	0	11	0
WLW	4	2017	3%	449930	86	674110	1016	0	16	0
WLW	4	2018	-2%	401470	87	685920	104470	0	14	0
WLW	4	2019	-4%	359290	88	731030	113050	0	16	0
WLW	4	2020	11%	650660	89	722080	104020	0	13	0
WLW	4	2021	10%	558540	90	787630	113550	0	13	0
WLW	4	2022	12%	560790	91	8670	116830	0	12	0

APPENDIX 2

ETHICAL CLEARANCE

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

13 Sept 2023

Dr Zwelihle Wiseman Nzuza (223115210)
School Of Acc Economics&Fin
Westville

Dear Dr Zwelihle Wiseman Nzuza,

Original application number: 00023152
Project title: Evaluating the financial health of the listed food retail companies in the SADC region

Exemption from Ethics Review

In response to your application received on , your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW.**

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

PLEASE NOTE:
Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,

[redacted]

Prof Josue Mbonigaba
Academic Leader Research
School Of Acc Economics&Fin

APPENDIX 3

EDITOR'S CERTIFICATE

English language editing
SATI membership number: 1002595

18 August 2024

To whom it may concern

This is to confirm that I, the undersigned, have language edited the **thesis** of

ZWELIHLE WISEMAN NZUZA

The responsibility of implementing the recommended language changes rests with the author of the document.

Yours truly,

[redacted]

Dr Linda Scott