The Impact of Coronavirus Disease 2019 on the Financial Performance of Retail Stores in South Africa

by

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DECLARATION

I, Thandolwethu Tshetshelele Singwane, affirm that this dissertation is entirely my creation in its planning and implementation. It represents the academic efforts I have undertaken and has not been presented to any other university or educational institution for a different degree. Any information sourced from published or unpublished works by others has been properly credited and referenced.

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This research project is devoted to my family and friends for their ongoing support. I would also like to express my sincere gratitude to my supervisor, Professor Jean Damascene Mvunabandi, for his unwavering support and guidance.

ABSTRACT

The retail sector is widely recognised as a key contributor to economic growth and plays a vital role in national economies. However, the emergence of the novel coronavirus disease 2019 (COVID-19) introduced a level of vulnerability that affected all aspects of life and business. The COVID-19 pandemic significantly disrupted the financial performance of retail companies. Significant revenue losses were due to widespread store closures and government-imposed lockdowns. Nevertheless, the extent to which COVID-19 affected the financial performance of retail businesses has been underexplored. The study aimed to investigate the impact of the COVID-19 disease 2019 on the financial performance of retail stores in South Africa and develop a financial performance model suitable for future pandemic scenarios or similar crises. The study was conducted using an econometric approach through panel data analysis, with data drawn from 197 retail companies listed on the JSE, impacted by the COVID-19 pandemic during the period 2017 to 2022.

Content analysis was employed to examine COVID-19 disclosures within the annual reports of publicly listed retail companies from 2017 to 2022. Company websites, Statistics South Africa, and McGregor BFA were utilised as data sources. Financial ratios were dependent variables, while retail companies and COVID-19 were treated as independent variables. This approach enabled the identification of analytical trends reflecting changes in financial performance in response to the pandemic.

The study revealed an adverse relationship between financial performance and the retail sector. An increase in COVID-19 cases correlated with a decrease in financial performance for retail stores not offering essential goods and services. Additionally, the results showed that the number of COVID-19 cases was negatively and insignificantly associated with Tobin's Q, indicating that an increase in case numbers corresponded with a decrease in Tobin's Q or vice versa. The study acknowledged that various factors may have influenced the impact of the COVID-19 pandemic on the financial performance of retail businesses. It is therefore recommended that further research be conducted to identify and examine these contributing factors.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ATO	asset turnover ratios
COVID-19	coronavirus disease 2019
CR	current ratio
CS	company size
DUT	Durban University of Technology
EBITDA	earnings before interest, taxes, depreciation, and amortisation
EMP	employees
EPS	earnings per share
GAAP	generally accepted accounting principles
GDP	gross domestic product
GMM	generalised method of moments
GPM	gross profit margin
GR	growth rate
IFRS	international financial reporting standards
JSE	Johannesburg Stock Exchange
KPMG	Klynveld, Peat, Marwick, Goerdeler
NOC	number of cases
NOS	number of stores
NPM	net profit margin
PC	production capacity
ROA	return on assets

ROCE	return on capital employed.
ROE	return on equity
ROI	return on investment
RS	retail size
SA	South Africa
SETA	Sector Education and Training Authority
STATS SA	Statistics South Africa
SYS GMM	system generalised method of moments
TOI	type of Industry
UIF	Unemployment Insurance Fund
USA	United States of America
WHO	World Health Organisation
W&RSETA	Wholesale and Retail Sector Education and Training Authority

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter begins with the background, providing a contextual overview of the effect of the coronavirus disease 2019 (COVID-19) pandemic on the retail sector, focusing on the economic disruptions caused by lockdowns and reduced consumer activity. This section also highlights the significance of retail in South Africa's (SA's) economy and identifies

The research problem is then articulated, drawing attention to the gaps in current literature, the conflicting international findings, and the limited South African research on how the pandemic affected financial performance. The aim of the study is stated, followed by the research. The research questions that guided the investigation are then presented, along with the research hypotheses, developed to test the relationship between the COVID-19 pandemic and financial performance. The significance of the study is outlined, demonstrating the value of the results for researchers, investors, policy makers, and the retail sector The chapter concludes with an overview of the dissertation structure.

1.2 Background

According to the World Health Organisation (2020), the first confirmed case of the COVID-19 pandemic was published in Wuhan, China, on December 31st, 2019. The virus spread expeditiously as many people travelled from Wuhan to various regions of China to partake in the Chinese New Year festivities by mid-January 2020. The Chinese government implemented a total prohibition on travel to the Wuhan area on 23 January 2020, but the virus had already spread widely due to its high transmissibility.

Companies around the world experienced disruptions in operations, supply chains, and revenue flows, with widespread effects on production capacity, workforce management, and consumer demand. The retail sector was significantly affected due to its dependence on in-person transactions, global sourcing, and continuous customer footfall.

SA was not spared by the pandemic, finding itself in confrontation with the novel COVID-19. During the pandemic and the national trajectory of contagion, the country was faced with complex policy decisions. The primary strategy to mitigate the demographic impact of the virus involved implementing lockdowns that restricted household activity and non-essential production, aiming to curb transmission by disrupting social and economic interaction. These interventions had severe consequences for the economy, resulting in immediate contraction in economic activity as well as long-term negative effects. Policymakers had to weigh the health benefits of lockdowns against the associated economic costs (Arndt *et al.,* 2020b).

Aliamutu, Bhana and Suknunan (2023:17) argue that retail companies' financial performance is vital for financial stakeholders and the broader economy. A financially successful company can provide sustainable returns to stakeholders through stable revenues and net profit. In SA, the retail sector accounts for 14% of gross domestic product (GDP). Furthermore, it ranks third in terms of GDP contribution, behind the mining and manufacturing sectors, at 14% (Stead et al., 2018). However, retail revenues were severely affected by the COVID-19 pandemic between 2019 and 2021, with financial performance significantly declining compared to pre-pandemic years.

The South African retail sector includes several major retailers such as Shoprite Holdings, the Mr Price Group, Edgars, the Clicks Group, and Cashbuild Limited, all of which were adversely impacted. Stores that did not supply essential goods were required to close during lockdown, prompting Edcon (operating Edgars, JET and CNA) to undertake retrenchments and apply for Unemployment Insurance Fund (UIF) support to pay employees' wages (Sistonen, 2014:9)

Khaled et al. (2020) observe that the onset of the COVID-19 pandemic in 2020 caused significant disruptions to companies, requiring rapid short- and medium-term adaptation. Therefore, due to ongoing pressure on retailers to improve financial performance across key metrics (Lichtenstein, Netemeyer & Maxham III, 2010), some retailers shifted focus to online sales to mitigate the impact of COVID-19 restrictions (Donthu & Gustafsson, 2020).

A company's financial health is demonstrated through its financial statements, and investors are drawn to firms with consistently improving performance (Lee, 2023). However, the global impact of the COVID-19 outbreak had serious consequences for retail financial success and, in turn, affected the South African context. COVID-19 led to uncertainty, negatively influencing returns

across sectors, increasing market volatility, and contributing to rising unemployment and poverty levels in SA.

Different findings have emerged regarding the financial impact of the COVID-19 on companies (Salsabilla *et al.*, 2021). While studies have explored the pandemic's profound effect on public health and the global economy, limited research has examined its impact on the financial performance of retail stores. An analysis of the correlation between retail stores and financial performance may guide Johannesburg Stock Exchange (JSE)-listed retailers in future pandemic scenarios.

According to StatsSA (2019), SA's economy was already experiencing stagnation before the pandemic, with growth below 1%, contributing to rising unemployment and inequality. However, as retailers depend on import and export activity, lockdown restrictions constrained operations even more at the time. Additionally, regulations focused primarily on preserving the healthcare system and largely neglected the food system, which led to food price increases and reduced access for low-income communities (Omoruyi, Dakora & Oluwagbemi, 2022). A clear empirical understanding of how the COVID-19 pandemic affected the financial performance of South African retail stores is lacking.

The current study, therefore, examined South African retail businesses listed on the Johannesburg Stock Exchange because of the scarcity of empirical studies focused on understanding how the pandemic impacted the financial outcomes of South African retail stores. Motivated by this gap, given the sector's wide national footprint, retailers were selected for the study. This selection, based on sales performance and availability of financial statements, was appropriate for the chosen quantitative research design. Reports relating to the COVID-19 and financial disclosures were collected from 197 selected stores and analysed using statistical and econometric regression models.

1.3 Research Problem

SA faced a national crisis with the outbreak of the novel COVID-19, which led to the widespread transmission of COVID-19 (Arndt *et al.* 2020a). To mitigate virus transmission, the government implemented a national lockdown to disrupt social and economic contact patterns. These measures had a substantial impact on the economy, triggering an immediate contraction in economic activity along with lasting negative effects (Mamaro & Mabandla, 2022).

The financial performance of the retail sector deteriorated due to lockdown measures implemented by the South African government in reaction to the COVID-19 outbreak. This downturn was exacerbated by income losses, reduced consumer spending, and heightened public anxiety (Redda, 2021). Although retailers supplying essential goods were permitted to operate during the lockdown, the sector still experienced reduced profitability. In 2020, the World Trade Organisation predicted a decline in global trade sales ranging from 13% to 32%.

Previous studies have presented varying perspectives on the financial impact of the COVID-19 pandemic. Salsabilla *et al.* (2021) note that the outbreak affected both public health and the global economy. Devi *et al.* (2020) identify a positive correlation between the pandemic and financial performance, while Shen *et al.* (2021) report that company performance declined due to the pandemic. Rababah *et al.* (2020a) examine listed companies in China and find significant negative effects during the first quarter of 2020, including reductions in sales growth, return on assets (ROA), return on equity (ROE), and asset turnover ratios (ATO). However, Rababah *et al.*'s (2020a) study focuses only on the early stages of the pandemic, not fully accounting for differences among retail categories, and offer findings that are not readily generalisable to other national contexts.

Aifuwa, Saidu and Aifuwa (2020) analyse the impact of the COVID-19 pandemic on firm performance in Nigeria and observe that lockdown measures disrupted operations, leading to reductions in revenue and profitability. Although this study addressed multiple sectors, it reflects the Nigerian context, and its findings do not capture the distinctive characteristics of the South African retail environment. The limitations of their research included insufficient attention to long-term effects, challenges in data accuracy during the pandemic, and the likelihood that findings would become outdated as circumstances evolved.

Roggeveen and Sethuraman (2020) maintain that the pandemic disrupted daily life and the broader economy. Its immediate impact on retail was considerable, and its long-term consequences have begun to emerge. Companies continued to struggle with recovery, and the economy entered a gradual rebound phase.

Due to these divergent findings and the limited volume of South African research, conclusive evidence regarding the profitability impact of the COVID-19 pandemic was lacking. However, the current study addressed these concerns by generating empirical insights into the impact of COVID-19 on the profitability, sales, and operational efficiency of South African retail stores. Through the analysis of financial data, the research sought to enable retailers to identify areas of vulnerability and potential growth, supporting decisions related to supply chain restructuring and digital innovation.

The results were expected to provide policymakers with evidence to design targeted interventions, such as subsidies or tax relief for severely affected outlets. For investors, the results offered insights into exposure to risk and emerging opportunities in SA's retail sector. Furthermore, the research contributed to global debates on crisis response, providing theoretical and practical tools for managing future disruptions. By aligning empirical findings with real-world applications, the study endeavoured to strengthen the adaptability and sustainability of the retail sector in SA.

1.4 Research Aim and Objectives

1.4.1 Research aim

The study investigated the impact of COVID-19 on the financial performance of retail stores in SA.

1.4.2 Research objectives

The research objectives were

1. To assess the financial performance indicators of retail stores in SA before and after the onset of the COVID-19 pandemic.
2. To analyse the extent to which the COVID-19 pandemic affected the financial performance of SA's retail stores.
3. To suggest a financial performance model of retail stores for future pandemic scenarios or similar crises.

1.4.3 Research questions

Based on the research aim and objectives, the following questions guided the study.

1.4.3.1 Primary research question

What was the impact of the COVID-19 pandemic on the financial performance of retail stores in SA?

1.4.3.2 Secondary research questions

1. What were the financial performance indicators of South African retail stores before and after the onset of the COVID-19 pandemic?
2. To what extent did the COVID-19 pandemic affect the financial performance of South African retail stores?
3. What financial performance model can be proposed to guide South African retail stores in responding to future pandemic scenarios or similar crises?

1.5 Study Significance

The research was significant because it addressed the historical lack of data on financial performance in key segments of SA's retail sector, particularly retail stores listed on the JSE. Existing information was limited, and previous studies excluded several categories of retail businesses, such as those in food, clothing, pharmaceuticals, textiles, consumer durables, health, and automotive sales. Stead *et al.* (2018) contend that the retail sector is among the most competitive and profitable globally for business investors. In light of this, there was a clear need for further empirical investigation.

The research results contributed to the existing corpus of knowledge on the financial implications of the COVID-19 pandemic for the retail sector in SA. By focusing on the financial outcomes of retail stores from 2017 to 2022, the study provided a structured overview and actionable insights for understanding how the pandemic, which began in 2020, affected the industry's performance. The investigation offered valuable insight into the specific challenges experienced by retail businesses in the country and the extent to which the pandemic influenced their financial outcomes. In addition, it addressed unresolved issues in the existing literature and sought to close empirical gaps left by prior research.

1.6 Research Hypotheses

Research hypotheses define the expected relationships between the study variables. These are typically formulated in two forms: the null hypothesis (H0), which suggests that no significant relationship exists, and the alternative hypothesis (H1), which proposes that a meaningful association is present. In this study, Hypothesis 1 focused on the relationship between the COVID-19 pandemic and the financial performance of retail stores, while Hypothesis 2 examined the effect of the COVID-19 pandemic on financial performance outcomes. Both hypotheses aligned with the study's aim of uncovering the impact of the COVID-19 global outbreak on the financial outcomes of South African retail stores listed on the JSE.

The hypotheses were developed based on the study objectives and variables that addressed the link between the COVID-19 and the financial performance of JSE-listed retail firms. The following hypotheses were tested:

Hypothesis 1

H0: The financial performance of JSE-listed retail stores was not significantly associated with the impact of the COVID-19 pandemic.

H1: The financial performance of JSE-listed retail stores was significantly associated with the impact of the COVID-19 pandemic.

Hypothesis 2

H0: The COVID-19 pandemic had no significant impact on the financial performance of SA's retail stores.

H1: The COVID-19 pandemic had a significant impact on the financial performance of SA's retail stores.

1.7 Dissertation Layout

This dissertation comprises five chapters, as follows:

Chapter 1 provides the background, problem statement, research aim, objectives, and questions, the study's significance, the research hypotheses, and the dissertation layout.

Chapter 2 presents the literature review, exploring relevant secondary sources and explaining the theoretical framework.

Chapter 3 outlines the research methodology, including the research design and methods used to select the sample and collect/analyse data.

Chapter 4 presents and discusses the research results.

Chapter 5 concludes the study, providing recommendations for policy, practice, and future research.

1.8 Chapter Synthesis

Chapter 1 established the foundation for the study on how the COVID-19 pandemic affected the financial performance of retail stores in SA, particularly those listed on the JSE. The background section traced the global origins of the pandemic and situated SA within that context, outlining how the government's lockdown strategy was to reduce contagion by limiting social and economic interactions. The retail sector, identified as the third-largest contributor to GDP, was significantly disrupted due to its dependence on in-person trade, international supply chains, and continuous consumer demand, which the lockdown restricted.

Building on this context, the chapter articulated a research problem grounded in gaps in the existing literature. While international studies had offered insights into the economic impact of COVID-19, results and findings were context-specific, time-limited, and not generalisable to the South African retail environment. The study responded to this gap by examining how the pandemic influenced financial outcomes in a localised and sector-specific context.

The research aim, objectives, questions, and hypotheses provided a structure for assessing the connection between financial indicators and the epidemic. The chapter highlighted the significance of the research in contributing to the limited body of empirical work on the financial impact of the pandemic on retail in SA, offering practical value to stakeholders. Chapter 1 concluded by outlining the structure of the dissertation, showing how subsequent chapters built upon the foundation laid here.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter 2 presents the literature review, which is structured to provide conceptual and empirical foundations for the study. The chapter begins with the literature on constructs relevant to the research. This review includes an explanation of the concept of financial performance, followed by a detailed discussion of financial performance. The review then considers the structure and role of financial statements and how financial statement analysis is used to interpret financial health. The section concludes by examining the significance of financial performance analysis, particularly in the retail sector.

The chapter then covers the theoretical framework of the study, which provided the analytical lens through which the data were interpreted. In this chapter, three theories are reviewed: agency theory, the value investing theory, and the efficient market hypothesis. In the study, each of these theories offered a different point of view on financial decision-making, investor behaviour, and market efficiency.

The empirical literature review in this chapter provides evidence from recent studies on the topic. It begins by reviewing the impact of the COVID-19 pandemic on retail store financial performance and then considers the significance of the retail sector in the South African economy.

This section discusses the contribution of the retail sector to employment and GDP, provides an overview of the South African retail sector, including retail and market size, patterns in consumer spending/level of demand, and the role of major contributors to the sector. The subsection on the COVID-19 pandemic sets the stage for an understanding of its influence.

The review also includes a discussion on the measures implemented by the South African government to contain and mitigate the spread of the COVID-19 pandemic, focusing on the declaration of the state of national disaster and the introduction of various lockdown levels.

Attention is then given to the effects of the government's COVID-19 pandemic regulations on retail stores in SA, including their impact on ongoing expenses and employees. These effects are

contextualised through existing empirical studies on the impact of the COVID-19 pandemic on the financial performance of SA's retail stores. Finally, the chapter presents the conceptual framework, which synthesised the insights gained from the literature and theories reviewed and underpinned the study.

2.2 Concepts

2.2.1 Financial performance

The concept of measuring and examining a company's financial health, referred to as financial performance, has long been established and has developed in parallel with advancements in commerce, trade, and accounting. Evaluating a company's profitability is essential because it indicates how effectively the business uses its assets to generate revenue and sustain profitability. This assessment involves the analysis of assets, liabilities, equity, expenses, and revenue (Suciati *et al.* 2024). In preparing financial statements, accounting standards and practices, including international financial reporting standards (IFRS) and generally accepted accounting principles (GAAP), must be adhered to, ensuring the accuracy, uniformity, and compliance of financial reporting. These globally accepted frameworks establish consistent structures that promote comparability and clarity of financial statements through different companies and geographical contexts.

According to Wani and Ahmad (2015), financial performance represents an organisation's monetary stability and health, making it a valuable tool for comparing the performance of multiple companies within or across sectors. The growth of an industry or company is closely tied to its financial performance, which ultimately influences economic prosperity. Furthermore, financial performance is an outcome which is assessed using various instruments, in particular cash flow analysis, trend analysis, and financial ratios, and profitability metrics by actuaries, analysts, and investors to guide decision-making, financial reporting, and investment strategies (Wani & Ahmad, 2015).

Almajali, Alamro and Al-Soub (2012) argue that financial performance can be assessed using multiple indicators. Among these, return on sales reflects profitability, ROA shows the effectiveness with which assets are utilised, and ROE highlights the returns to shareholders. Omondi and Muturi (2013) suggest that three key dimensions can be used to evaluate company

performance. The first is productivity, or the rate at which inputs are transformed into outputs. The second is profitability, which measures how far earnings exceed costs. The third is market premium, refering to the degree by which a company's market valuation surpasses its recorded book value.

According to Pramono *et al.* (2020:183), financial performance reflects how various organisational components operate, as evidenced by the company's financial condition at a given time. This includes the mobilisation and allocation of funds, based on indicators such as capital adequacy, liquidity, and profitability. Matar and Eneizan (2018) emphasise that understanding the factors influencing financial performance is essential not only for investors but also for scholars. Financial performance acts as a barometer for a company's economic health and emphasises. Therefore, improved financial performance signals effective resource utilisation, which in turn contributes to the national economy.

A company's financial performance, whether strong or weak, reflects the outcomes of its profitability, efficiency, and financial stability, assessed through indicators such as net profit, ROE, and earnings per share (EPS). Traditionally, organisational performance has been gauged using financial metrics. In the aftermath of COVID-19 financial crisis, investors showed increased concern regarding the financial standing of retail companies (Matar & Eneizan, 2018).

Financial performance is often evaluated using indicators such as sales, turnover, employment levels, and share price trends. In contrast, innovation performance is typically assessed through investment in research and development, patent counts, the ratio of revenue from new products, or self-assessed innovation outcomes (Aliamutu *et al.*, 2022).

Given its status as a key economic sector and major employer**,** the retail sector plays an important role in national development. In this rapidly evolving sector, performance measurement has gained growing significance. Performance measurement involves the systematic collection, analysis, and reporting of information to monitor how resources are used, products created, and services delivered (Ersoy 2017). Among other dimensions, financial performance encompasses the methods used to assess an organisation's monetary effectiveness (Adhiambo 2020).

According to Tien, Anh and Ngoc (2020), the most frequently employed profitability metrics include ROA and ROE, both of which can be calculated using net profit (either before or after tax).

The results are reflected in ratios such as return on investment (ROI), ROA, and ROE, alongside increases in sales, profitability, and the attraction of new business opportunities.

2.2.2 Financial statements

A company's financial statements provide financial data about its financial activities during a specific accounting period, which can be used to evaluate its success (Nurhayatia, Endrib & Siswantoc, 2020). Financial statements consist of essential components that presents insight about a company's financial condition and operations. These include the balance sheet, which, as described by Nurhayatia *et al.* (2020:808), is a financial statement that reflects a company's position at a particular point in time. It is one of the three core financial statements used to evaluate business performance.

Another key component is the income statement (profit and loss statement) which discloses financial performance over a defined period. In addition, the statement of changes in equity and the cash flow statement provide summaries of equity movements and cash inflows and outflows, respectively. Lastly, the notes to the financial statements offer essential disclosures and contextual details and are considered inseparable from the main statements.

Financial statements reflect the outcome of accounting processes that record a company's economic activities in line with the requirements of relevant accounting standards and principles (Robinson, 2020:8). These statements summarise accounting information for internal management such as investors and external stakeholders, analysts, and creditors. Analytical tools used to interpret these financial statements include several ratios, grouped by function.

Liquidity ratios

Liquidity ratios assess a business's capacity to fulfil its short-term obligations, focusing on how rapidly assets can be converted into cash. These ratios are mainly derived from cash flow patterns (Durrah *et al.*, 2016). The two leading indicators are the quick ratio and current ratio. According to Martina, Sadalia and Bukit (2019:2), these are standard tools in financial analysis to evaluate a firm's capacity to meet short-term debt obligations efficiently.

Solvency ratios

Solvency ratios are used to measure a business's long-term financial stability and its ability to fulfil ongoing obligations. The debt-to-equity ratio indicates how much of the company's capital structure consists of debt compared to shareholders' equity. Similarly, the debt-to-assets ratio reflects the proportion of total assets financed through debt, providing insight into financial leverage and risk exposure.

Profitability ratios

Profitability ratios assess a company's ability to produce profits in relation to sales, assets, equity, or various other indicators. Markonah, Salim and Franciska (2020: 87) explain that these ratios are also indicators of management effectiveness. While profit remains central to assessing performance, the World Economic Forum (2019) notes that performance is now also judged based on a company's impact on shareholders and its commitment to environmental, social, and governance outcomes.

Tobin's Q

Tobin Q assesses the relationship between the market value of a company's assets and their cost to replace them, offering insights into investor sentiment and growth expectations (Ishaq, Islam and Ghouse, 2021: 2). A high ratio suggests that the firm is valued favourably relative to the cost of its assets.

Gross margin

Gross margin measures the portion of revenue remaining after deducting direct costs such as raw materials and labour. It provides insight into production efficiency and pricing strategies.

Net profit margin

The net profit margin reflects the portion of revenue that is retained as net profit once all expenses have been deducted. As noted by Nariswari and Nugraha (2020: 3), this ratio shows how efficiently the company controls costs over a particular period.

Return on equity

ROE reflects how effectively a firm uses its equity base to generate net profit after tax. A higher ROE indicates more efficient capital utilisation and improved shareholder returns.

Return on assets

According to Kurniawan (2021: 3), ROA measures the profitability of a company concerning its total assets, revealing how well a firm converts its resources into earnings.

Return on investment

ROI is a financial metric used to assess the profitability of a specific investment relative to its cost. Investors widely use it to compare the attractiveness of various investment opportunities. A higher ROI signifies better returns, while a lower ROI may reflect less efficient investment performance.

2.2.3 Significance of financial performance analysis

The impact of the COVID-19 pandemic on the financial performance of retail businesses represented a crucial area of research for predicting a company's financial health. Therefore, the current study presented a quantitative analysis of retail stores using key financial ratios. The financial statements were analysed using ratios, such as ROCE, gross profit margin (GPM), Tobin's Q, current ratio (CR), ROA, and ROE.

Financial performance analysis is essential to understanding the health and sustainability of businesses across industries. In the case of South African retail stores, this analysis can assist in navigating the economic challenges posed by the COVID-19 pandemic through informed financial decision-making.

2.3 Theoretical Framework

The agency theory, efficient market hypothesis, and value investing theory are the theoretical frameworks informing the study's exploration of how the COVID-19 pandemic affected the financial performance of South African retail stores.

2.3.1 Agency theory

Jensen and Meckling (1976) describe an agency relationship as the arrangement whereby store owners (the principal) hire a manager and employees (the agent) to perform work on their behalf. This kind of relationship can become problematic if the principal and agent have conflicting personal interests. Agency theory is a comprehensive framework that seeks to explain the agency

relationship and address two key problems arising from it: the agency problem and the risk-sharing problem. These issues are based on assumptions about human behaviour, organisational structures, and information flow. To resolve them, the theory proposes either a behaviour-based contract or an outcome-based contract to manage the agency relationship effectively (Rungtusanatham *et al.*, 2007).

In the retail context, managers are often perceived as risk-averse due to a self-driven market and external influences. During the pandemic, owners' objectives of maintaining financial performance had to be balanced with employee safety. Enhanced digital surveillance and clearly defined operational protocols, such as social distancing, played a critical role in ensuring that employees adhered to safety guidelines while maintaining productivity, thereby managing potential conflicts of interest (Bosse & Phillips, 2016).

Shareholders may have been concerned about how effectively managers responded to COVID-19 while protecting financial interests. This concern would have reflected divergent motivations and information asymmetries affecting information accuracy and, consequently, principal-agent trust. When trust in agents is low, principals often favour performance-based compensation to align incentives. The pandemic brought about substantial uncertainty and disruption, making it difficult for principals to access timely, accurate data on operational and financial performance. This information asymmetry could have resulted in disagreement over resource allocation and decision-making.

Agency theory was, therefore, useful in the study for understanding the dynamics between shareholders (retail store owners) and managers during the COVID-19 crisis, providing a perspective for analyzing how these dynamics influence financial results.

2.3.2 Efficient market hypothesis

An efficient market, in informational terms, is one in which prices reflect all available and relevant data about securities. The efficient market hypothesis (EMH) asserts that newly available information is quickly absorbed and reflected in security prices (Naseer & Bin Tariq, 2015: 1). In the context of the COVID-19 impact on South African retail stores, EMH suggests that the market rapidly incorporated all available information about the pandemic's effects. This included data on

virus transmission, government interventions, economic outlooks, and company-specific developments.

EMH, as applied to the study, involved evaluating how swiftly and accurately SA's financial markets responded to pandemic-related information in the pricing of retail stocks. This response was assessed through analyses of market behaviour, degrees of informational efficiency, and anomalies during the crisis. To test EMH empirically in the South African retail sector during COVID-19, the research conducted event studies around key dates (e.g., lockdown announcements) and applied regression analysis to assess how stock performance correlated with pandemic-related news. These analyses indicated the extent to which stock prices adjusted efficiently in response to new information.

2.3.3 Value investing theory

Value investing refers to the practice of trading securities based on a gap between their market price and intrinsic value, typically defined as the present value of expected future shareholder returns (Lee, 2014:12). A significant strength of value investing theory is its broad applicability across asset classes, including stocks and bonds (Calandro, 2014:90). In the pandemic context, evaluating its impact on retail stores from a value investing perspective involves examining factors such as lockdown restrictions and firm-level financials. This includes close analysis of balance sheets, income statements, and cash flow statements, as well as trends in revenue, profit margins, liquidity, and solvency before and during the pandemic.

According to Sistonen (2014:9), when a stock's market price deviates from its intrinsic value, informed investors are expected to intervene and exploit the mispricing through arbitrage. In practice, however, such opportunities are constrained by various factors. Markets can remain irrational for extended periods, longer than some investors can stay solvent. For instance, during the pandemic, some retail firms such as Edcon experienced sustained profit declines despite attempts at arbitrage by investors and traders (Sistonen, 2014).

This theory underpinned the study by providing a framework for understanding how investors might have assessed and responded to fluctuations in the financial performance of listed retail companies during the COVID-19 period. The emphasis on intrinsic value and market mispricing was particularly relevant in a volatile environment where investor confidence, public health

measures, and firm-specific fundamentals diverged sharply. By applying value investing theory, the study aimed to interpret how pandemic-related disruptions influenced investor behaviour and valuations in the retail sector, and to analyse how these factors were reflected in key financial indicators.

2.4 Empirical Literature Review

2.4.1 Impact of COVID-19 on the retail sector

According to the WHO (2020), as the pandemic intensified, numerous sectors worldwide, including retail, experienced significant disruption (WHO, 2020). KPMG (n.d.) and Islam *et al.* (2020) note that the constant disruption in the consumer and retail industries had already been a challenge before COVID-19 in SA. The pandemic intensified these pressures, resulting in financial distress and even liquidation for many firms, tiny and medium-sized enterprises. One notable case is Edcon, which entered business rescue proceedings in April 2020 after reporting a loss of R2 billion in revenue and relying on UIF assistance to pay staff salaries (Sistonen, 2014).

According to Statistics SA (2021), 90% of businesses reported turnover below expected levels during the pandemic. The retail sector was among the five most affected industries, with over 36% of firms reducing staff and 25% cutting working hours. This contributed to widespread unemployment, with three million jobs lost (Statistics SA, 2021; 2022). The decline in profitability and cash flow, along with increased costs for health compliance, strained financial performance across the retail sector, resulting in store closures and corporate restructuring Statistics SA, 2021; 2022)..

OECD (2020) evidence shows that lockdowns and reduced consumer spending caused sharp declines in revenue and stock levels for retail businesses. Supply chain disruptions worsened the situation, affecting liquidity and ratios such as the current ratio and quick ratio. However, OECD (2020) findings also indicated that the impact varied depending on company size, product offerings, and digital readiness. Firms with stronger online platforms and essential goods fared relatively better than others.

Mamaro and Mabandla (2022) investigated how the COVID-19 pandemic affected the financial performance of retail firms listed on the JSE in SA. Using descriptive statistics, the study disclosed that the decline in financial performance was caused by the pandemic. However, they noted a strong and significant correlation between financial liquidity, firm size, and performance indicators ROA, Tobin's Q, and ROE.

In Nigeria, Aifuwa *et al.,* (2020) explored the relationship between the COVID-19 outbreak and firm performance. Their study concluded that the pandemic in China negatively influenced Nigerian firms' performance. The authors recommended that government support be directed at facilitating local sourcing of raw materials, as the pandemic severely disrupted imports from China and other countries.

Rababah *et al.,* (2020b) analysed the effect of the pandemic on the financial performance of Chinese listed companies. The findings showed a noticeable drop in total earnings, profitability, and business investment across several sectors due to economic disruptions. There were several industries that were most affected such as travel, tourism, and transport, which are sectors reliant on movement and consumer mobility during the first quarter of 2020. Rababah *et al.,* (2020a) further observed that while pandemics are historically rare, the COVID-19 outbreak served as a global reminder of their ongoing potential impact.

A common gap emerges from the findings discussed above. The outcomes of these studies were potentially influenced by sample size, types of retail businesses, and national contexts. Additionally, the duration over which financial performance was assessed also shaped the results. Furthermore, this previous research focused on specific subsectors and contexts, often with limited or non-comparable samples. Therefore, the current study expanded the sample scope and includes a broader range of JSE-listed retail stores in SA. This enabled a comprehensive sectoral analysis and understanding of the pandemic's effects. Furthermore, it contributed to the literature by focusing specifically on formal South African retail firms listed on the JSE, which is under-explored in empirical research.

2.4.2 Impact on the South African retail sector

The retail sector in SA plays a central role in promoting economic development (Pramono *et al.*, 2020) and historically ranks as the second-largest source of employment after the government (Teuteberg, 2021), underscoring its strategic importance. The sector comprises approximately 30,000 tax-registered businesses, employing around 20% of the economically active population (Teuteberg, 2021), and contributes significantly to GDP, estimated at 20%, ranking as the fourth-largest contributor (Ward & Pillay, 2023:9). Retail in SA refers to the selling of products or services directly to end consumers, either for personal or household use, and does not require the retailer to produce the goods but rather to purchase them wholesale for resale (Pramono *et al.*, 2020). The model supports a consumer-driven economy where retail sales are a key driver of economic activity.

2.4.3 Pre-COVID-19 retail landscape (before March 2020)

Before the pandemic, SA's retail sector was thriving. The industry was dominated by five major firms: Shoprite Holdings Ltd, Pick n Pay Retailers Pty Ltd, Spar Group Ltd, Massmart (a Walmart subsidiary), and Woolworths Holdings Ltd, which collectively accounted for approximately 80% of total formal retail sales (Redd & Ngqinani, 2023). A detailed breakdown from an earlier period (2012–2015) is presented in Table 2.1 (Promozione, 2013), highlighting turnover, employment, and market presence.

Table 2.1: Big 5 Retailers (2012-2015)

Retailer	Turnover	Employees	Market Share	Stores
Shoprite	R92.7 billion	99,000 (11,000 outside SA)	36%	1,456 corporate + 380 franchise
Pick n Pay	R59.3 billion	42,000	28%	937 in SA, 104 outside
Spar	R43.2 billion	10,000	28%	1,725 in Africa
Woolworths	R27.7 billion	26,900	8%	940 (including 479 in Australia)
Massmart	R65 billion	30,000	-	330 total, 633 buying group

The sector was diverse, comprising luxurious stores such as Woolworths, cash-and-carry stores such as Makro, and informal outlets like spaza shops (Masojada, 2021). The food and grocery segment led the market and was valued at R1.61 trillion in 2022, followed by clothing, electronics, health, and beauty (GlobalData, 2023).

Despite its strengths, the industry faced a persistent shortage of skilled labour, which contributed to broader unemployment challenges. In response, the Wholesale and Retail Sector Education and Training Authority (W&R SETA) introduced the Skills Programme Matrix to build capacity and enhance competence across the sector (W&RSETA, 2020). The positive correlation between retail scale and profitability was previously highlighted

2.4.4. During COVID-19 (March 2020 – December 2020)

The COVID-19 pandemic reached SA in early 2020, prompting a national lockdown on 27 March 2020 under the Disaster Management Act of 2002 (Ramaphosa, 2020). SA was the first African country to implement such a lockdown (Zanker & Moyo, 2020), and by 14 April 2020, 2,415 cases and 27 deaths had been confirmed (WHO, 2020). Lockdown regulations were gradually eased, as shown in Table 2.2, but the economic shock was immediate and severe.

Table 2.2: Lockdown Levels and Retail Impacts (2020)

Level	Dates	Key Retail Restrictions
Pre-Lockdown	1–26 Mar	Normal operations
Level 5	27 Mar–30 Apr	Only essentials; interprovincial travel banned
Level 4	1–31 May	Limited sectors, e-commerce partially allowed
Level 3	1 Jun–17 Aug	Takeaways, more retail open
Level 2	18 Aug–20 Sept	Full retail reopened with safety restrictions
Level 1	21 Sept–29 Dec	Nearly all activity resumed with precautions

Retail sales declined sharply. For example, textiles, clothing, and footwear sales dropped by 92%, while general dealers declined by 14% year-on-year (Ernest & Charles, 2024). Consumers shifted spending away from discretionary items toward essential goods (Teuteberg, 2021; Remes *et al.*, 2021). The informal sector, including spaza shops, suffered heavily due to the lack of fiscal relief available in developed countries (Mehtar *et al.*, 2020).

Retailers struggled with fixed costs such as rentals, salaries, and utilities (DUT Wholesale and Leadership Chair, 2019), while also absorbing new expenses for personal protective equipment (PPE) and sanitation. Staff absenteeism due to illness or transport constraints reduced productivity (Solomon, McNulty & Rana, 2020). In the Free State, trade sector employment fell by 6.9–7.2%

in Q4 of 2020, with older adults (55–64) most affected (Kgwale, 2021). UIF applications soared to 77,000 by mid-April, with R2.2 billion disbursed in COVID-19 benefits (Department of Employment and Labour, 2020).

Retailers with strong e-commerce platforms, such as Shoprite and Pick n Pay, were more resilient, while others reliant on physical stores faced devastating losses (Ernest & Charles, 2024). Lockdowns accelerated digital transformation, a growing number of consumers prefer to shop online.

Post-COVID-19 recovery (2021–2025)

By late 2021, retail performance remained below pre-pandemic levels. Between January and November 2021, sales grew by 3.2% over 2020 but were still 4.7% lower than in 2019 (Teuteberg, 2021). Load shedding and high unemployment continued to constrain growth.

However, by 2025, signs of recovery became evident:

- Retail trade sales grew 5.1% year-on-year in April 2025 and 4.2% in May 2025 (Reuters, 2025a; 2025b).
- Quarterly retail sales rose 3.4% year-on-year for the three months ending April 2025 (StatsSA, 2025).
- Trade sector employment improved by late 2024 (Bizcommunity, 2024).
- Retailers adapted to the new environment:
- E-commerce expanded rapidly. For instance, Takealot deployed 2,500 personal shoppers in township markets, targeting 5,000 by 2028 (Reuters, 2024).
- Shifting consumer preferences increased demand for health-conscious, plant-based, and halal-certified products (Redd & Ngqinani, 2023).
- Major players showed financial resilience. Mr Price reported a 7.8% increase in sales and a 10.1% earnings growth in FY ending March 2025 (Reuters, 2025c).

Despite this progress, challenges persist. Unemployment remains high, and the informal sector continues to struggle due to the limited government relief during the pandemic. Nonetheless, the sector's capacity to innovate and adapt, particularly through technology adoption, diversification, and online platforms, has positioned it for sustained growth. The South African Retail Association

projected that the sector would reach a value of ZAR 1.7 billion by 2025, growing at a compound annual rate of 5.1% (Reuters, 2024).

2.5 Summary of Empirical Literature

This section summarises the empirical studies on the relationship between the COVID-19 pandemic and financial performance across various sectors, including retail. The selected studies employ diverse methodologies and originate from multiple geographic contexts. The summary identifies patterns, methodological approaches, and limitations, informing the research gap addressed by the current study.

The analysis highlights how COVID-19 disrupted organisational profitability and financial resilience globally. However, there is limited literature on the long-term financial performance of retail stores in SA, regarding ROA, ROE, and EPS. Table 2.3 summarises the studies and gaps.

Table 2.3: Summary of Empirical Studies and Identified Gaps

Author and Year	**Study**	**Study Methodology, Findings and Recommendations**	**Research Gap**
Salsabilla *et al.* (2021)	*Impact of the COVID-19 pandemic on the profitability of Islamic banks in Indonesia*	This study applies a qualitative approach to gather expert insights and analyses literature on Islamic banking during the pandemic. It explores profitability shifts in natural contexts through document review and expert opinion.	The study focuses on Islamic financial institutions in Indonesia and does not address the retail sector or South African context.
Shen *et al.* (2021)	*The influence of the COVID-19 pandemic on the financial performance of listed retail firms in SA*	Panel data analysis shows that the pandemic reduced the financial performance of retail firms listed on the Johannesburg Stock Exchange (JSE).	The study only examines JSE-listed firms and does not account for the broader formal and informal retail sector.
Rababah *et al.* (2020b)	*Analysing the effects of the COVID-19 pandemic on the financial*	Using a descriptive research design, the study finds that SMEs were most affected, with	The study is limited to China, early pandemic impacts, and does not

Author and Year	Study	Study Methodology, Findings and Recommendations	Research Gap
	performance of Chinese listed companies	greater losses in industries reliant on face-to-face trade.	address long-term recovery or sectoral differences, such as retail.
Aifuwa *et al.* (2020)	*Coronavirus pandemic outbreak and firms' performance in Nigeria*	A quantitative survey-based approach grounded in rational choice theory. The study recommends that governments include private firms in recovery schemes.	The study is limited to Nigeria, lacks a long-term perspective, and faces data reliability challenges due to pandemic restrictions.

This summary reveals the need for research on South African retail stores' financial performance across pre-, during-, and post-COVID-19 periods. While most studies explore short-term financial shocks, few examine recovery trajectories, resilience mechanisms, or the role of sector-specific variables such as retail scale, consumer trends, or e-commerce adaptation. By addressing these gaps, the present study contributed to an understanding of how retail businesses in SA have navigated financial uncertainty and what strategies may support future sustainability.

2.6 Conceptual Framework

Figure 2.1 presents the conceptual framework for the study, which explored the connection between COVID-19 and the financial outcomes of retail shops in South Africa. The framework categorises COVID-19 as the independent variable, financial performance as the dependent variable. It includes a set of control variables, namely company size, production capacity, number of employees, and industry type. Furthermore, the framework disaggregates COVID-19 into two measurable dimensions: growth rate and number of cases, which are expected to influence financial outcomes. Financial performance, in turn, is assessed using six indicators: ROA, ROE, Tobin's Q, net profit margin (NPM), EPS, as well as EBITDA, or earnings before interest, tax, depreciation, and amortization. In the study, these measures collectively reflected the value, profitability, and operational efficiency of retail businesses (Mgilane, 2023).

The second layer of the framework concerns how financial performance is understood in business literature, particularly regarding profitability and resource efficiency. As emphasised by the

University of Pretoria (2023), a company's financial performance is fundamentally driven by profitability, which is determined by how effectively management employs total and net asset values listed on the balance sheet. This aligned with the dependent variable indicators in Figure 2.1, ROA and ROE, which directly measured returns generated from asset and equity utilisation.

The conceptual framework was underpinned by definitions of organisational performance that go beyond profit margins. Performance is widely regarded as the extent to which a company achieves its stated goals, mission, and vision through strategic implementation (Nursasi, 2020). This theoretical understanding supported the study's inclusion of performance metrics, as shown in Figure 2.1. Furthermore, the use of financial analytical tools was necessary to interpret financial performance outcomes, such as profitability, efficiency, and market valuation, particularly in the face of exogenous shocks like a pandemic.

As Suryanto and Refianto (2019) note, financial performance is not static; it varies across firms and time due to internal and external influences. This variation justified the inclusion of control variables in the framework to isolate the effects of COVID-19 from other contributing factors.

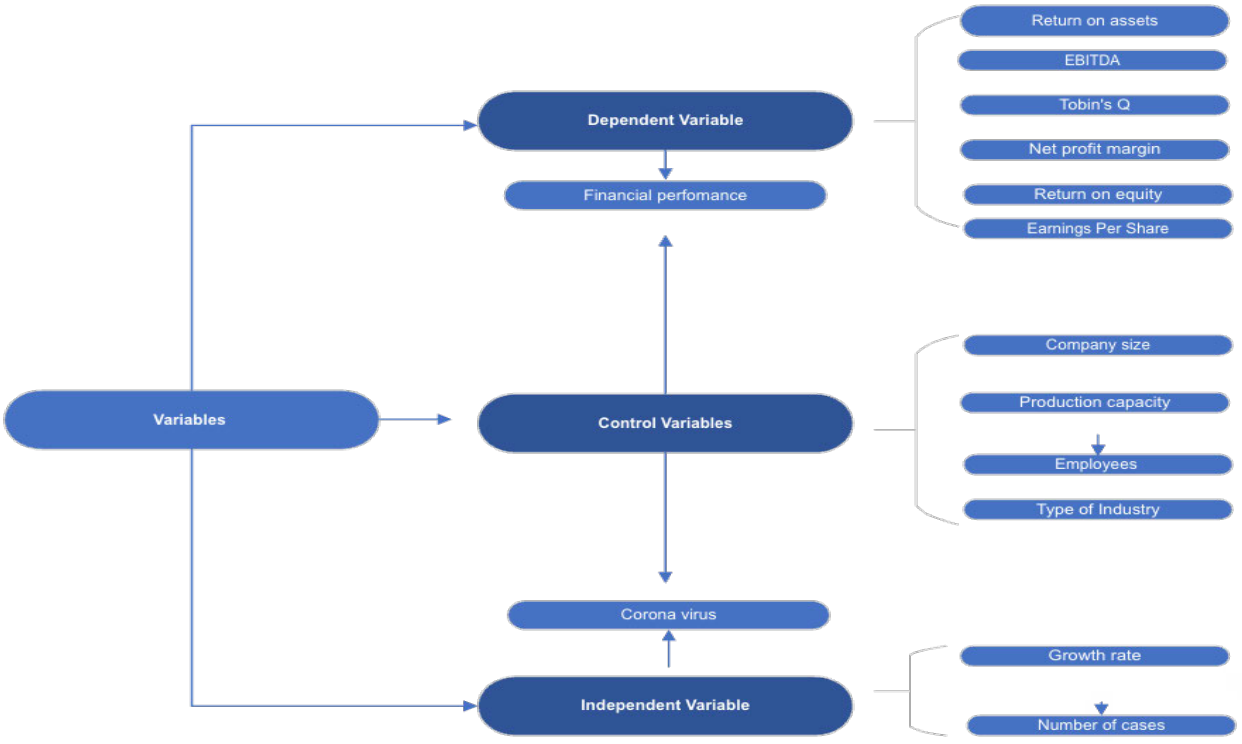

Figure 2.1: Conceptual framework

Source: Researcher's conceptualisation

2.7 Chapter Synthesis

Chapter 2 established a foundation for investigating the relationship between the COVID-19 pandemic and the financial performance of South African retail firms. The chapter began by unpacking the notion of financial performance. Key indicators such as ROA, ROE, EPS, and Tobin's Q emerged as central tools in evaluating the extent to which retail firms adapted to crisis-induced volatility. This foundation reinforced the conceptual coherence of the study's dependent variable.

The theoretical framework section provided interpretive lenses for analysing the empirical realities of the pandemic. Agency theory illuminated the conflicting interests between shareholders and managers under crisis conditions. The efficient market hypothesis offered insight into how rapidly markets incorporated pandemic-related risks into firm valuations. At the same time, value investing theory explained investor behaviour in response to perceived mispricing and long-term recovery expectations.

The section on the South African retail sector offered necessary contextual grounding. It traced the sector's pre-pandemic robustness, marked by dominant market players, high employment contributions, and diverse store formats, before analysing the disruptions triggered by lockdowns, supply chain breakdowns, and changing consumer behaviour during the COVID-19 period. The post-COVID recovery analysis showed signs of resilience, particularly among digitally adaptive and capital-rich firms. Yet, it also exposed structural constraints, such as persistent load shedding and uneven consumer recovery, that limited complete sectoral rebound.

The empirical literature and gap analysis expanded the chapter's comparative scope.. A recurring limitation across the literature was the narrow temporal scope, with limited focus on long-term effects, post-pandemic adaptations, and firm-level heterogeneity. No study offered a detailed, multi-phase analysis of retail sector performance during and after the COVID-19 crisis in SA, a gap the present study filled.

The chapter culminated in the development of a conceptual framework anchoring the research design and justified the study's focus on financial metrics as proxies for organisational resilience.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted in this study, which investigated the impact of the COVID-19 pandemic on the financial performance of retail stores listed on the JSE. The chapter outlines the research design guiding the investigation, and explains the research paradigm underpinning it. The qualitative research is discussed in detail, followed by an overview of the target population, the sample size of the study, and the specific inclusion and exclusion criteria used to determine eligible retail firms. The chapter then elaborates on the data collection, describing how secondary data were obtained and prepared for analysis.

3.2 Research Design

A research design consists of a plan for carrying out research, producing reliable, relevant, and accurate answers to the research questions and achieving the research aim and objectives (Benard, 2019; Mgilane, 2023:36). The present study employed a descriptive research design to obtain information about the impact of COVID-19 on the financial performance of retail stores in SA. According to Benard (2019), a descriptive research design enables researchers to collect detailed data about a specific phenomenon in its natural setting, such as the financial performance of retail firms during the COVID-19 pandemic, and to draw reliable conclusions by observing and analysing patterns, trends, and statistical relationships.

These conclusions are based on existing data rather than experimental intervention. They are particularly suitable for studies describing a current state of affairs and evaluating the impact of external factors over time. In the current study, descriptive analysis was supported by econometric measures such as regression analysis and financial ratio evaluation, including ROA, ROE, and EPS, to assess the relationship between COVID-19 and firm-level financial outcomes.

3.2.1 Research paradigm

A paradigms can be defined as fundamental sets of beliefs and concepts that act as a theoretical framework, shaping our understanding of the world and how we study it (Rehman & Alharthi, 2016). The research design followed in In this study, positivism was the guiding paradigm, which posits the existence of an objective reality that can be quantitatively evaluated using empirical data. The positivist paradigm holds that reality is objective, measurable, and not influenced by personal biases or emotions. Therefore, positivism was suitable because the study sought to identify quantifiable patterns in financial data. Furthermore, this paradigm indicated quantitative research techniques, such as statistical analysis, to explore and validate hypotheses regarding the connection between the COVID-19 pandemic and the financial outcomes of retail businesses.

Since the study centred on evaluating factual data, namely financial performance indicators and statistical relationships, the positivist approach fostered objectivity, scientific precision, and dependability in the results. The results were interpreted in light of statistical significance, with a focus on the objective and measurable connection between the COVID-19 pandemic and the financial performance of retail stores in SA.

3.2.2 Quantitative research

The descriptive research design was also quantitative, emphasising statistical analysis and numerical data. Taherdoost (2022) defines quantitative research as using numerical data obtained from observations to explain and describe phenomena, which those observations represent. The quantitative research design made it possible to measure retail firms' financial performance objectively in light of the impact of the COVID-19 pandemic.

3.3 Research Methods

The methods used to target the research population and select the sample, and to collect and analyse data, are explained in this section.

3.3.1 Target population

A target population is the group from on which a study focuses in addressing the research aim, objectives, and questions (Lamkin-Kennard & Popovic, 2019). The current research purposively selected a research population comprising all retail stores listed on the JSE. However, not all retail stores could be analysed. Therefore, a representative sample had to be selected.

3.3.2 Sample

The researcher purposively sampled 197 retail stores listed on the JSE. These companies were selected based on financial availability, historical data availability, diversity of business models, industry representation, market share and size, and geographical spread. The selected list of companies consisted of various segments of retail, namely food, clothing and textiles, consumer durables, footwear, health products, auto dealers, and fuel. All chosen companies were selected based on their R20 million total assets, with retail firms with total assets below R20 million being excluded.

Table 3.1 displays the criteria for inclusion and exclusion.

Table 3.1: Inclusion and Exclusion Criteria

Inclusion Criteria	**Exclusion Criteria**
JSE-listed companies	Non-retailers
Total assets exceeding R20 million	Not listed on the JSE
Operational for more than 5 years	No audited financial statements
Representation from various retail sector segments	Small, Medium and Micro Enterprises (SMMEs)
Availability of financial data for the past 5 years	Companies employing fewer than 1,000 staff members

Table 3.2 presents the sample investigated in the study. The target population for each category of retail comprised at least 50 companies, with a maximum limit of 100., The total number of observations classified by industry was 197. The study was conducted on the impact of COVID-19 on the retail sector for the period 2017–2022**.**

Table 3.2: Retail Store Sample

Type of Retail	Target Population	Sample	Percentage
Food	50	21	14%
Clothing & Textiles	68	68	20%
Consumer Durables	79	79	23%
Health	50	9	14%
Restaurants	50	17	14%
Fuel	50	3	14%
Total	**347**	**197**	**100%**

3.3.3 Data collection

The study relied exclusively on secondary data. According to Pederson et al. (2020), secondary data refers to information collected by a source other than the intended user or for a purpose different from the original intent. In the study, secondary data were sourced from official company websites, McGregor BFA, and STAT DATA, which were well-established databases with publicly available financial records.

The financial data from these websites comprised integrated annual reports of 347 South African retail stores listed on the JSE. These reports included three core datasets: the statement of comprehensive income, the statement of financial position, and COVID-19-related disclosures. However, the study focused purposively on 197 retail stores for which complete data were available across the five years from 2017 to 2022, allowing for an examination of the long-term effects of the COVID-19 pandemic.

The data were extracted from audited financial reports and compiled into a structured format using STAT DATA, enabling consistency across firms and timeframes. Statistical regression techniques were employed to analyse the relationship between the impact of COVID-19 and retail firms' financial performance, using ratios such as ROA, ROE, EPS, and Tobin's Q.

To mitigate potential researcher bias, which can compromise the objectivity and reliability of findings, the study applied transparency protocols and data triangulation. By relying on multiple

sources, including company reports, industry publications, and Statistics SA, the study ensured that findings were not overly dependent on any single perspective and were thus robust and credible.

3.3.4 Data analysis

The study employed econometric models to analyse the data. An econometric model is a mathematical and statistical representation of relationships among economic variables. By integrating economic theory with statistical techniques, econometric modelling enables the estimation and evaluation of interactions between various financial and economic indicators. These models are widely applied in economics and related disciplines to understand, explain, and predict economic phenomena (Dritsaki, 2015).

Data were collected on the financial performance of retail stores in SA during three timeframes: prior to, during, and following the pandemic. The dataset included key financial indicators such as sales, revenue, profit margins, and operating costs, all sourced from audited annual financial statements.

Variables were then identified for the econometric model, including dependent variables (such as changes in sales or profitability) and independent variables (including periods, COVID-19 case numbers, number of operational stores, and production capacity).

To address the research objectives, the study used multiple regression analysis. This analytical approach enabled the estimation of how COVID-19 and other explanatory variables affected retail firms' financial performance indicators. The impact of COVID-19 on the financial performance of South African retail stores was assessed using a series of structured econometric models.

For Research Objective 1, which was to examine the overall impact of the COVID-19 pandemic on the financial performance of retail stores in SA, econometric Models 1 and 2 were developed. These models specifically measured the influence of pandemic-related factors on key financial performance indicators such as ROA, ROE, EPS, and Tobin's Q. Financial indicators such as Tobin's Q are widely accepted as appropriate for measuring future market value and accounting performance in the retail sector (Shi et al., 2018).

The models used were as follows:

$$Tobin's\ Q_{it} = \beta_0 + \beta_1\, Tobins\ Q_{it-1} + \beta_2\, ROA_{it-1} + \beta_3 ROE_{it} + \beta_4 EPS_{it} + \beta_5 EBITDA_{it} + \beta_6 DE_{it} + \beta_7 PC_{it-1} + \beta_8 CS_{it} + \beta_9 NOE_{it} + \beta_{10} EMP_{it} + \beta_{11} TOI_{it} + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \beta_0 + \beta_1\, ROA_{it-1} + \beta_2\, NPM_{it-1} + \beta_3 OPM_{it} + \beta_4 ROE_{it} + \beta_5 DA_{it} + \beta_6 NOC_{it} + \beta_7 PCS_{it-1} + \beta_8 EMP_{it} + \beta_9 PC_{it} + \beta_{10} TOI_{it} + \varepsilon_{it} \quad (2)$$

To achieve Research Objective 2, which was to assess the financial performance indicators of retail stores in SA before and after the onset of the COVID-19 pandemic, the study developed Models 3 and 4. These models were designed to compare financial performance across the pre-pandemic and post-pandemic periods using selected indicators, measuring the influence of pandemic-related factors on ROA, ROE, EPS, and Tobin's Q. The models used were as follows:

$$ROE_{it} = \beta_0 + \beta_1\, ROE_{it-1} + \beta_2\, NPM_{it} + \beta_3 DE_{it} + \beta_4 ROA_{it} + \beta_5 CS_{it} + \beta_6 NOC_{it} + \beta_7 PC_{it} + \beta_8 EMP_{it} + \beta_9 TOI_{it} + \varepsilon_{it} \quad (3)$$

$$EPS_{it} = \beta_0 + \beta_1\, EPS_{it-1} + \beta_2\, ROE_{it} + \beta_3 DE_{it} + \beta_4 DY_{it} + \beta_5 PE_{it} + \beta_6 ROCE_{it} + \beta_7 EBIT_{it} + \beta_8 NOC_{it} + \beta_9 EMP_{it} + \beta_{10} PC_{it} + \beta_{11} TOI_{it} + \varepsilon_{it} \quad (4)$$

In the study, there were

- Multiple dependent variables (ROCE, ROE, EPS, etc.)
- 1 independent variable (COVID-19) with 3 proxies
- Several control variables

In the following paragraphs, the variables and their effect are explained:

The dependent variables were measured by ratios to ensure the reliability of the empirical data, such as revenue, stock holding period, market share, Tobin's Q, ROI, ROE, and ROIC

$\mathbf{ROCE_{it}}$ represented return on capital employed of retail stores *i* at time *t*. This was the profitability of a company's operations and its value creation performance in relation to the number of shareholders' and other debt holders' capital invested.

$\mathbf{EBITDA_{it}}$ represented earnings before interest, taxes, depreciation and amortisation of retail stores *i* at time *t*.

$\mathbf{Tobin's\ Q_{it}}$ was the retail stores ratio *i* at time *t*. Retail firms were assessed using the Q ratio to determine if they were overvalued or undervalued from 2017-2022.

$\mathbf{ROI_{it}}$ denoted return on investment of retail stores *i* at time *t*. This metric was used to measure the profitability of an investment of the retail stores, dividing net profit (or loss) by the investment's initial cost to determine how the retail companies performed from 2017-2022.

$\mathbf{NPM_{it}}$ denoted the net profit margin of retail stores *i* at time *t*.

$\mathbf{ROE_{it}}$ denoted the return on assets of retail stores *i* at time *t*. It referred to how efficiently a retail store generated profits, and was the result of dividing net income by the value of shareholders' equity.

$\mathbf{EPS_{it}}$ represented earnings per share of retail stores *i* at time *t*. This played an imperative role in determining a company's profitability. It involved dividing the income earned over a quarter or year (after excluding dividends) by the total number of stock shares outstanding.

The independent variable was COVID-19, measured by the growth rate, number of cases and pandemic longevity.

$\mathbf{GR_{it}}$ represented the COVID-19 growth rate *i* at time *t*.

$\mathbf{NOC_{it}}$ denoted the number of reported COVID-19 infections for retail store *i* at time *t*. In the study, the number of cases was determined **using official data from** Statistics SA for the period 2019 to 2022.

$\mathbf{LGV_{it}}$ denoted the duration of the COVID-19 pandemic's impact on retail store *i* at time *t*. In the study, longevity was measured by the number of months during which operations were affected by pandemic-related restrictions between 2019 and 2022

Control variables: When control factors are excluded from regression models, the inferences drawn about core factors can be significantly altered (Marimuthu, Mvunabandi & Maama, 2023). To avoid creating a fictitious link between the dependent and independent variables, production capacity (PC)**, c**ompany size (CS)**,** employees (EMP) and type of industry (TOI) were the control variables.

Regression analysis

Regression analysis examines the relationship between variables using statistical methods (Hartono & Robiyanto, 2023). The system generalised method of moments (GMM) estimator developed by Arellano and Bond (1991) is widely used for empirically estimating dynamic panel data models. The study applied the system generalised method of moments (SYS GMM) estimator results recommended by Arellano and Bond (1991). Furthermore, robust parameters were designed to determine whether the COVID-19 pandemic had a negative or positive impact on the South African retail sector.

By using SYS GMM estimators for panel data models, it integrates moment conditions for the model when examining changes over time and for analysing absolute values (Bun & Windmeijer, 2010). The SYS GMM allows the consideration that a variable's impact may vary among different groups or levels of the variables, such as retail size (RS), number of stores (NOS), PC, inventory (I), EMP and TOI. The financial performance of the South African retail stores was explained by profitability—ROIC, TOBIN's Q, ROI, market share, RS, growth rate (GR)—and the COVID-19 pandemic.

Descriptive Statistics

To address Research Objective 2, which was to assess the extent to which the COVID-19 pandemic affected the financial performance of South African retail stores, the study employed descriptive statistical methods to analyse trends in key financial indicators. Descriptive statistics were appropriate for this objective because they enabled the study to summarise, compare, and interpret variations in financial performance over time, offering a picture of how the pandemic influenced profitability and operational outcomes.

This approach was informed by Olarewaju, Mbambo and Ngiba (2020), who applied descriptive statistics in their study on the effects of inflation accounting on the financial performance of retail

stores in KwaZulu-Natal, SA. In the present study, descriptive statistics were used to identify patterns, averages, and fluctuations in selected performance variables over the period under review.

The target population comprised 197 registered retail firms listed on the JSE, and data were extracted from audited financial reports for the period 2017 to 2022. These data covered a six-year timeframe, enabling a comparison of financial performance before and after the onset of the COVID-19 pandemic. Indicators, such as ROA, ROE, EPS, and Tobin's Q, were analysed to establish the direction and magnitude of pandemic-related changes in financial outcomes.

Panel Data Analysis

This study employed panel data analysis. It used a multiple regression estimating method based on the information derived from the analysis of the panel data. According to Hartono and Robiyanto (2023), to estimate the model's parameters, the study applied a dynamic estimation methodology known as the system generalised method of moments (Sys-GMM). Various estimating problems often hindered the use of alternative regression methods. However, these were frequently addressed by implementing alternative regression techniques.

Given this study, the panel data method, which is a combination of cross-sectional and time-series dimensions, was employed to control for unobserved heterogeneity. Some problems that arose when conducting research included the tendency for overlooked factors to influence outcomes, incorrect data measurements, the correlation between predictors and unforeseen variables, and unidentified differences within groups being studied.

Ratios were used to analyse the data collected. To prepare for the analysis, the balance sheet and income statement were examined to extract the items relating to the following ratios: net profit margin, return on capital employed, return on shareholders' equity, and gross profit margin, tobin's Q, current ratio, return on assets, return on equity, and stock holding period. Each retail company's yearly ratios were captured in Excel and other software programmes.

Extensive research into the financial impacts of COVID-19 was conducted for a prolonged period (2017–2022), covering the years before, during, and after the pandemic, to encompass the complete economic aftermath, which may have taken considerable time to materialise across various industries and organisations. This extended research enabled evaluation of recovery

strategies and their effectiveness. Moreover, it facilitated an understanding of enduring structural alterations in the economy that could elude shorter-term analyses, offering a comprehensive perspective on the pandemic's long-term effects.

By using several financial ratio indicators, financial ratio analysis assessed whether retail stores were succeeding in achieving their financial goals over time and identified their relative strengths and weaknesses. Jung, Kwon and Noh (2022) note that financial ratios, such as liquidity, profitability, and solvency ratios, were calculated and compared by analysts for retail stores in SA prior to and during the pandemic. The financial health

3.4 Validity and Reliability

According to Golafshani (2003:601), reliability referred to the consistency and accuracy of results over time, as well as how well They reflected the whole population under study. Research was considered reliable if its findings could be reproduced using a similar methodology. Validity was essential in determining whether a study accurately measured its intended purpose and presented truthful results. Essentially, it reflected whether the research effectively addressed its research question. Researchers typically established validity by posing a set of inquiries and referencing prior research for guidance (Guion, 2004). Quantitative rigour was defined as a method for building credibility in the findings of a research study (Johnson, Adkins & Chauvin, 2020). It allowed the researcher to maintain consistency in their methods throughout the study and provided an accurate portrayal of the population under investigation.

The study’s analysis drew on relevant information from multiple sources, including documents, annual reports, and financial statements. It relied on numerous published and reputable studies concerning the financial performance of retail stores. Furthermore, the student underwent content analysis training in data collection and coding to ensure a shared understanding of analytical procedures. The following measures were implemented to ensure the validity, reliability, and trustworthiness of the data:

• Selection matrix: To ensure both data quality and validity, a selection matrix was developed. This matrix played a central role in guiding the collection, selection, and analysis of retail store data through audited financials.

• Data collection**:** Data were gathered methodically and per established protocols to minimise errors and bias. Researchers ensured thorough documentation and verification of data accuracy and completeness.

• Interpretation: The analysis of quantitative results was conducted with care and supported by empirical evidence. Conclusions were drawn based on the data, considering potential limitations and alternative explanations.

• Statistical analysis: Appropriate statistical techniques, aligned with the research design and objectives, were employed to analyse the quantitative data. Methods were selected based on the data's nature and the research questions under examination.

• Sampling: A representative sample of retail stores across SA was selected, including firms of various sizes and sectors (e.g., groceries, clothing, electronics). Only companies with total assets exceeding R20 million were included; those below this threshold were excluded.

• Ethical clearance: The study did not require ethical clearance, as it relied solely on publicly available data, such as published articles, JSE financials, and annual reports from retail companies' official websites.

The researcher collected reference materials such as annual reports to assess whether emergent themes were supported by the data. Several strategies were used to enhance data reliability, including data quality assessment, cleaning, triangulation, and cross-verification. The study drew on documents from credible sources such as the JSE, World Health Organisation, and Statistics SA, and incorporated findings from established literature on retail financial performance. Interpretative analysis was applied to assess the dependability of the secondary data used in the research.

The performance of retail stores during the crisis was examined in this analysis.

3.5 Selecting between fixed effects and random effects

The evaluation of random and fixed effects is based on a Hausman test applied by the researcher to evaluate the null hypothesis regarding the consistent estimation of the models. The null hypothesis has random effects; while the alternative hypothesis has fixed effects. The Fixed Effects model estimates parameters specific to the current sample, while Random Effects model assumes

that the sample consists of units randomly chosen from a larger population, allowing for generalization. The Hausman test evaluates whether the specific error of a particular model is correlated with its independent variables. If the p-value is less than 0.05, then the null hypothesis is rejected, which indicates that there is a correlation between the specific error of the model and the independent variables, thus suggesting that Random Effects may yield biased and unreliable estimates and therefore the Fixed Effects model should be preferred because it produces consistent estimates.

3.6 Chapter Synthesis

This chapter outlined the methodological foundation of the study, which examined the effect of COVID-19 on the financial performance of JSE-listed retail stores in SA. It adopted a descriptive, quantitative approach within a positivist paradigm, enabling the use of objective, numerical data. A purposive sample of 197 firms was drawn from a broader population of 347, selected based on strict inclusion and exclusion criteria, including asset thresholds and data availability.

The study relied exclusively on secondary data, extracted from annual financial statements between 2017 and 2022. These data were compiled and analysed using panel data econometric models, with financial indicators such as ROA, ROE, EPS, and Tobin's Q serving as dependent variables. In contrast, COVID-19 metrics (growth rate, case numbers, and pandemic duration) were used as independent variables, alongside control variables such as production capacity and firm size.

To meet its objectives, the study applied regression analysis, using SYS-GMM estimators to examine the dynamic relationship between the pandemic and firm-level performance. Robust validity and reliability protocols, including triangulation, data cleaning, and ratio-based metrics, ensured the credibility of findings. The methodology enabled the investigation of both short-term impacts and longer-term financial trends, producing a comprehensive and empirically grounded analysis of the pandemic's consequences for SA's retail sector.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter presents the empirical results of the study on the impact of the COVID-19 pandemic on the financial performance of JSE-listed retail stores in SA. Using audited financial data from 2017 to 2022, the chapter assesses financial performance indicators before and after the onset of the pandemic. It begins with an analysis of descriptive statistics, followed by a multicollinearity assessment to determine the interrelationships among key independent variables. The chapter then presents the results of panel data regression analyses, examining the effects of COVID-19 on ROA, Tobin's Q, ROE, and EPS. These models evaluated how variables such as CS, EMP, PC, TOI, and NOC influenced financial performance. The chapter concludes by summarising the findings in light of the research objectives and the existing literature, setting the stage for the concluding Chapter 5.

4.2 Descriptive statistics

Table 4.1 presents the descriptive statistics addressing the Research Aim and Objectives 1 and 2. The study examined the financial performance of JSE-listed retail stores in South Africa before and after the onset of the COVID-19 pandemic. It analysed the extent to which the pandemic affected their financial outcomes. The data were collected from 197 JSE-listed retail stores in SA between 2017 and 2022.

The table presents each variable alongside the count of observations (Obs), mean, standard deviation (Std. dev.), lowest (Min), and highest (Max) values, thereby offering a statistical overview of the data distribution across the sample. The variables include firm-specific attributes such as CS, EMP, PC, and TOI, pandemic-specific data (NOC), and various financial performance indicators, including ROE, ROA, EPS, and Tobin's Q.

Table 4.1: Descriptive Statistics Addressing Research Objectives 1 and 2

Variable	Observation	Mean	Standard deviation	Minimum	Maximu.
CS	105	20.57143	7.315496	10	30
EMP	105	26700.24	36764.58	2002	160000
PC	105	2476303	2776696	0	14100000
TOI	105	44.28571	24.72375	10	100
NOC	42	2255040	1205935	1063547	3446532
ROE (%)	105	29.04181	175.7942	-459.76	1737.55
ROCE (%)	105	10.07819	15.92841	-57.4	36.06
EBITDA (Rands)	101	10.52317	16.84374	-1	163.85
NPM (%)	103	4.750971	8.876119	-47.86	29.71
EBIT (%)	101	9.665446	19.01975	-136.01	65.49
ROA (%)	105	12.03952	9.972379	-23.24	38.53
TobinsQ	105	4.04219	3.941749	-2.04	18.93
EPS (RANDS)	105	672.3047	775.6808	-1179	3953
DE (%)	103	.8560194	9.491478	-91.77	10.16
ROI (%)	105	162.8785	390.3549	0	2310.77
DY (%)	91	4.046703	2.581756	.03	13.68
OPM (%)	103	7.732427	10.73572	-58.14	42.99
PE (RANDS)	101	15.84634	12.82669	-54.62	58.79
TAT (RANDS)	103	2.06767	1.059207	.37	4.68

Source: Researcher's computation

The descriptive statistics revealed a mean of 20.57 for CS, 26,700 for EMP, 2,476,303 for PC, 44.29 for TOI, and 2,255,040 for NOC. Based on the criteria applied in the study, a minimum CS value of 10 and a maximum of 30 corresponded to company size classifications derived from the number of employees. This suggested that the sample included retail firms of varying sizes, providing a balanced basis for analysis. NOC was measured using the number of COVID-19 cases recorded between 2017 and 2022, which ranged from a minimum of 1,063,547 to a maximum of 3,446,532, reflecting the different stages of the pandemic. The standard deviations were 7.31 (CS), 36,764.58 (EMP), 2,776,696 (PC), 24.72 (TOI), and 1,205,935 (NOC).

The data indicated an average Tobin's Q of 4.04, suggesting that, on average, the market value of the retail stores exceeded the replacement cost of their assets. While a high Tobin's Q may have

indicated strong growth potential, excessively high values might have signalled speculative overvaluation. Conversely, certain stores reported Tobin's Q values ranging from −2.02 to 0.97, indicating undervaluation, where the asset base exceeded market value. This may have pointed to weak profitability, financial strain, or inefficient asset utilisation.

Most retail stores exhibited a decline in Tobin's Q between 2017 and 2021 due to the pandemic. For instance, Choppies Enterprises Ltd, one of the largest food retailers in SA with over 161 distribution stores, experienced a decline in Tobin's Q from **2** 16 in 2017 to −2.04 in 2021. Similarly, Mr Price Group Ltd, employing over 32,000 people and specialising in clothing, sportswear, and home goods, recorded a decrease from 6.55 in 2017 to 4.36 in 2021. The Lewis Group, a major retailer of furniture and electronics, also experienced a reduction from 0.73 in 2017 to 0.42 in 2021.

The retail stores' average ROE of 12.61% reflected their ability to generate profit from shareholder equity, although performance varied significantly across firms. A more precise comparison was achieved by benchmarking ROE against peer firms within the retail sector. From 2019 onwards, some companies, such as Foschini Group and Famous Brands, recorded negative ROE figures, reflecting the adverse financial effects of COVID-19 in SA. At the same time, the retail sector experienced a decline in EPS from 2017 to 2021.

As shown in Table 4.1, the analysis revealed a slight negative correlation between PC and EPS, with a coefficient of 0.000065 and a p-value of 0.269. This suggested that although increasing PC typically resulted in higher EPS, this relationship was disrupted during the pandemic, which led to reductions in PC and EPS, ultimately diminishing profitability. This trend signified that many stores became less profitable during this period. ROA also declined between 2017 and 2021. However, most retail stores maintained an ROA above 7%, indicating moderate profitability. T

hese results supported the efficient market hypothesis, which holds that financial performance metrics such as ROE, EPS, and ROA should be immediately reflected in share prices upon disclosure. Therefore, any abnormal stock returns after the release of financial information may have reflected deviations from market efficiency. Likewise, persistent disparities between actual Tobin's Q values and theoretical expectations may have implied that the market either overreacted or underreacted to available information, raising questions about the validity of market efficiency.

The ROE had 105 observations, and the analysis reported a mean of 29%, indicating that, on average, companies generated a 29% return on shareholders' equity. The minimum value was −459.76, which suggested that some companies experienced substantial losses concerning their equity, possibly due to high debt levels, large write-offs, or ineffective management during the COVID-19 pandemic. The maximum value of 1,737.55 was exceptionally high, likely the result of low equity levels combined with unusually high profits in certain retail firms. The standard deviation of 175.79 was also high, indicating that ROE values varied widely across firms, with some retailers showing performance levels that differed significantly from the average.

Additionally, the study found that Tobin's Q had a mean value of 4.04, which indicated that, on average, the market valuation of retail stores was approximately four times greater than the replacement cost of their assets. A Tobin's Q greater than 1 typically implied strong investor confidence and favourable market valuation, although this could have been influenced by firms that performed well during the pandemic.

EPS had a mean of 672.30 and a standard deviation of 775.68, suggesting that while some companies achieved substantial profits, others recorded much lower earnings or even losses.

These descriptive statistics provided a multidimensional snapshot of the retail sector's structural profile and financial condition during the pandemic. The variations in CS, EMP, and PC highlighted the differing operational scales and capacities of firms, while the wide range in NOC reflected the uneven intensity of COVID-19 exposure over time. Financial indicators, such as Tobin's Q, ROE, ROA, and EPS, revealed not only contrasting levels of profitability and market valuation but also the vulnerability of many firms to external shocks. Notably, the combined data painted a picture of a sector marked by heterogeneity, in which some firms maintained moderate profitability and investor confidence. In contrast, others experienced sharp downturns in value and earnings. These results laid the foundation for understanding how firm-specific characteristics interacted with broader disruptions to shape performance outcomes during the crisis.

This descriptive overview provided a necessary empirical baseline for evaluating the differential impact of COVID-19 across firms, identifying which financial indicators were most sensitive to systemic shocks, and guiding the subsequent inferential analysis and the development of resilient financial response strategies for future crises.

4.3 Multicollinearity Analysis

The concept of collinearity refers to the situation in which two variables are nearly perfect linear combinations (Daoud, 2017). A multicollinear relationship is characterised by high linear dependency between independent variables. Performing this test was important in the present study because strong collinearity could have produced unreliable or distorted regression outcomes.

Table 4.2 presents the correlation matrix used to assess multicollinearity concerning Research Objectives 1 and 2. It displays the correlation coefficients between independent variables, specifically those used to assess the financial performance of retail stores before and after the COVID-19 pandemic. The rows represent each variable tested, namely ROA, NOC, CS, EMP, PC, TOI, and ROE, while the columns provide their corresponding correlation coefficients with one another. Values closer to +1 or −1 indicate stronger positive or negative linear relationships, respectively, while values near 0 reflect weak or no linear correlation. Correlations with a p-value less than 0.05 are considered statistically significant.

Table 4.2: Correlation Results Addressing Research Objectives 1 and 2

	ROA	NOC	CS	EMP	PC	TOI	ROE
ROA	1.000	-0.1943	-0.1176	-0.0241	-0.1158	0.0178	0.1709
NOC	-0.1943	1.000					
CS	-0.1176		1.000				
EMP	-0.0241			1.000			
PC	-0.1158				1.000		
TOI	0.0178					1.000	
ROE	0.1709						1.000

Note: Correlation values; significance where p < 0.05 is considered statistically significant

Source: Researcher's computation

Table 4.2 presents the correlation results used to assess multicollinearity concerning financial performance. The table displays correlation coefficients between the key independent variables investigated in the study, namely ROA, NOC, CS, EMP, PC, TOI, and ROE. Each row represents a variable's correlation with the others, and the values in the cells indicate the strength and direction of their linear relationships. Coefficients closer to +1 or −1 reflect strong correlations,

while those near 0 indicate weak or no correlation. Statistically significant correlations are interpreted with a p-value threshold of 0.05.

Table 4.2 shows that ROA had negative correlations with NOC, CS, EMP, PC, and TOI, with coefficients of −0.1943, −0.1176, −0.0241, −0.1158, and 0.0178, respectively, and a weak positive correlation with ROE (0.1709). These results suggested that increases in structural variables such as firm size, employment, and production capacity, along with rising COVID-19 case numbers, were not associated with improved asset efficiency. Instead, the negative coefficients indicated that firms more heavily exposed to these pressures tended to record lower ROA, reflecting reduced profitability during the pandemic period.

	ROA	NOC	CS	EMP	PC	TOI	ROE
ROA	1.000	-0.1943	-0.1176	-0.0241	-0.1158	0.0178	0.1709
NOC	-0.1943	1.000					
CS	-0.1176		1.000				
EMP	-0.0241			1.000			
PC	-0.1158				1.000		
TOI	0.0178					1.000	
ROE	0.1709						1.000

Note: Correlation values; significance where p < 0.05 is considered statistically significa

Mamaro and Mabandla (2022), in their study on *The influence of the COVID-19 pandemic on the financial performance of listed retail firms in South Africa*, concluded that the pandemic negatively affected firm performance. However, their analysis focused solely on firm size and growth rate as explanatory variables. By contrast, the present study, aligned with Research Objectives 1 and 2, adopted a broad approach, incorporating a wider range of structural and pandemic-related variables, such as EMP, PC, TOI, and NOC, to capture the financial dynamics of the sector during the COVID-19 period.

In the current study, an analysis of the COVID-19 data revealed strong intercorrelations among key structural variables, including CS, EMP, PC, TOI, and NOC. The interconnected nature of

these factors suggested that changes in one dimension, such as an increase in production capacity, were often mirrored by changes in others, such as workforce size or industry type.

These results demonstrated that the financial performance of retail firms during the pandemic was not shaped by isolated variables but by a network of co-occurring pressures. The multicollinearity analysis confirmed that firm-specific attributes—when subjected to systemic shocks—interacted in complex ways that amplified financial risk. This interconnectedness underscored the need for integrated econometric models capable of capturing the compounding effects of both structural and contextual variables. It also reinforced the significance of Objectives 1 and 2, which sought to assess and analyse the nature and extent of the pandemic's impact on retail financial performance. These multivariate insights provided groundwork for the inferential analyses that followed.

4.4 Regression Analysis Addressing Research Objective 1

Regression analysis was performed to address Research Objective 1 of the study, which was to determine the financial performance indicators of South African retail stores before and after the onset of the COVID-19 pandemic**.** Financial performance was used as a quantifiable metric for assessing a company's financial health. Two ratios, Tobin's Q and ROA, were employed to analyse financial performance, focusing particularly on retail businesses, including apparel stores, supermarkets, and electronics outlets, that operated in SA. Table 4.3 and the subsequent regression tables present the results of the analysis comparing the period before COVID-19 (before 2020) to developments during and after its onset, to understand the transformations that occurred over time.

4.4.1 Impact of COVID-19 on ROA

Table 4.3 presents the regression results for ROA based on the random-effects general least squares (GLS) model. This analysis was conducted to address Research Objective 1, which was to evaluate the financial performance of retail stores in SA before and after the onset of the COVID-19 pandemic. The rows in the table list the explanatory variables used in the model: NPM, DA, OPM, ROE, NOC, CS, EMP, PC, and TOI. The final row (_cons) represents the constant term of the regression equation.

The columns display the statistical outputs generated by the model for each variable:

- Coefficient: The estimated effect of the variable on ROA.

- Standard error: The degree of uncertainty around the coefficient estimate.
- z: The z-statistic used to test the significance of the coefficient.
- p > z: The p-value indicating whether the effect is statistically significant. Values below 0.05 are considered significant.
- [95% confidence interval]: The range within which the true coefficient is expected to fall with 95% confidence.

The table also includes values for sigma_u and sigma_e, which represent the standard deviations of the firm-level and residual error components, respectively. The intra-class correlation (rho) shows the proportion of total variance attributable to firm-specific effects. The R-squared values (within, between, and overall) indicate the explanatory power of the model across different dimensions of the data.

Table 4.3: Regression Results for ROA

ROA	**Coefficient**	**Standard error**	**z**	**p>z**	**[95% confidence interval]**	
NPM	.7084491	.4504208	1.57	0.116	-1.591258	.1743594
DA	3.390418	3.67188	0.92	0.356	-3.806334	10.58717
OPM	1.099323	.3336676	3.29	0.001	.4453466	1.7533
ROE	.0557893	.0232824	2.40	0.017	.0101565	.101422
NOC	7.08e-07	6.20e-07	1.14	0.253	-5.07e-07	1.92e-06
CS	.0237511	.1760551	0.13	0.893	-.3213106	.3688129
EMP	1.69e-07	.0000306	0.01	0.996	-.0000599	.0000602
PC	8.48e-09	3.55e-07	0.02	0.981	-6.86e-07	7.03e-07
TOI	.0417117	.0431748	0.97	0.334	-.0429094	.1263327
_cons	-1.196573	5.374448	0.22	0.824	-11.7303	9.337151
sigma_u	2.3923121					
sigma_e	4.5237035					
rho	.21854914 (fraction of variance due to u_i)					
R-squared:						
Within	0.7584					
Between	0.7833					
Overall	0.7680					

Source: Researcher's computation

Table 4.3 reveals the panel results from the random-effects GLS regression. The Hausman test was insignificant (p = 0.3297) The Hausman test produced a p-value of 0.3297 that was not statistically significant. Therefore, the null hypothesis of uncorrelated unique errors and regressors will not be rejected. Therefore, the Random Effects model will be the most appropriate and efficient estimator of the ROA model. Although the Hausman test suggested that a random-effects model would be suitable, the panel regression findings were derived using random-effects GLS regression through Stata software for efficiency and robustness. The regression results indicated that the COVID-19 pandemic had a negative impact on the financial performance of the selected retail stores. The R-squared value of 0.7833 suggested that approximately 78% of the variation in ROA could be explained by NOC, CS, EMP, PC, and other pandemic-related factors.

Table 4.3 shows a positive coefficient of 0.708 for NPM, with a p-value of 0.116, which was greater than 0.05 and, therefore, not statistically significant. However, the positive coefficient still suggested that an increase in NPM was associated with an increase in ROA, meaning that retail stores that improved their net profit margins tended to enhance their asset utilisation efficiency.

Although Table 4.3 also presents a positive coefficient for PC (8.48e-09), the p-value of 0.981 indicated that this relationship was statistically insignificant. This result implied that changes in production capacity were not significantly associated with changes in ROA. Nonetheless, the direction of the relationship suggested that a decrease in PC may have led to lower output and sales, which, in turn, negatively affected asset returns.

These regression results revealed how operational and pandemic-related variables collectively shaped retail firms' financial outcomes. While individual predictors, such as NPM and PC, did not reach statistical significance, their directional associations with ROA offered insight into how profitability and operational efficiency were affected under pandemic conditions. The high R-squared value underscored the extent to which firm-specific characteristics and external shocks accounted for fluctuations in ROA. Furthermore, the regression analysis demonstrated that financial performance during COVID-19 was not driven by isolated factors but a complex interplay of profitability margins, production inputs, and contextual disruptions. This interconnectedness indicated the need for multidimensional financial models when evaluating sector resilience in crisis conditions.

4.4.2 Impact of COVID-19 on Tobin's Q

Table 4.4 presents the panel regression results examining the impact of various financial and structural indicators on Tobin's Q, which served as a proxy for market valuation in the study. Unlike the previous table, which assessed factors influencing ROA, Table 4.4 focuses on Tobin's Q as the dependent variable and incorporates explanatory variables such as ROA, ROE, EPS, EBITDA, DE, PC, CS, NOC, EMP, and TOI.

The rows display each of these independent variables. At the same time, the columns report the estimated regression coefficient, standard error, z-statistic, p-value, and the lower and upper bounds of the 95% confidence interval. The table also provides the values for the within, between, and overall R-squared, indicating the explanatory power of the model, as well as sigma values for the variance

Table 4.4: Regression Results for Tobin's Q (Objectives 1 and 2)

Tobin's Q	**Coefficient**	**Standard error**	**z**	**p>z**	**[95% confidence interval]**	
ROA	.0881477	.0307355	2.87	0.004	.0279072	.1483881
ROE	-.025984	.0036597	7.10	0.000	-.0331568	-.0188111
EPS	-.0004356	.0002693	1.62	0.106	-.0009635	.0000923
EBITDA	.6041135	.098876	6.11	0.000	.41032	.7979069
DE	.5921491	.1352002	4.38	0.000	.3271615	.8571367
PC	0.00062	-0.001	0.04	0.970	-0.0003	-0.0003.3
CS	.0118926	.0679659	0.17	0.861	-.1213181	.1451033
NOC	-0.0037	0.001	0.27	0.786	-0.0004	0.00023
EMP	0.0004	.0000139	0.36	0.721	-.0000223	.0000322
TOI	-.0165406	.0190166	0.87	0.384	-.0538125	.0207312
_cons	-1.351059	2.020269	0.67	0.504	-5.310714	2.608596
sigma_u	1.5293863					
sigma_e	.80056629					
rho	.7849256 (fraction of variance due to u_i)					
R-squared:						
Within	0.8869					
Between	0.8740					
Overall	0.8699					

Source: Researcher's computation

Table 4.4 displays the findings from the analysis regarding the impact of COVID-19 on Tobin's Q. The Hausman test was significant (p = 0.0017). NOC is associated with Tobin's Q negatively and statistically insignificantly, as an increase in NOC corresponded to a decrease in Tobin's Q and vice versa.

During the lockdown, companies were affected based on the number of cases that were reported by the World Health Organisation, which resulted in an impact on the financial performance of retail stores that were not selling essential living goods. The number of cases (NOC) was negatively associated with Tobin's Q, although the impact was significant. This was expressed in terms of a negative coefficient of -0.0037 and p = 0.004, which was less than 0.05. Based on the analysis, Tobin's Q had a p-value of 0.004. Since this value falls well below the alpha threshold of 0.05, the relationship is considered statistically significant.

This implied that COVID-19 (NOC) was a robust trigger for the decline of Tobin's Q and financial performance. As the number of cases increased, the financial performance of retail stores deteriorated significantly, due to the lockdown measures implemented to curb the virus's spread.

These results suggested that epidemiological factors, particularly NOC, significantly influenced investor sentiment and the market valuation of retail firms during the COVID-19 crisis. The implication is that financial performance during systemic shocks cannot be adequately explained through internal firm metrics alone. Metrics should include external public health variables, which exert considerable influence over the expectations, confidence levels, and risk perceptions of capital market participants. In periods of heightened uncertainty, such as a global pandemic, fluctuations in infection rates and public health responses may act as powerful external signals, reshaping investor decisions and, by extension, corporate valuation metrics such as Tobin's Q. This underscores the necessity of integrating interdisciplinary perspectives**,** linking finance, economics, and epidemiology**,** when evaluating firm performance under systemic stress.

4.4.3 Impact of COVID-19 on ROE

Table 4.5 shows the regression results evaluating the impact of COVID-19 on ROE. The table rows list the independent variables used in the model (NPM, DE, ROA, DY, NOC, CS, EMP, PC, and TOI). At the same time, the columns provide statistical outputs including the coefficient, standard error, z-value, p-value, and the confidence interval of 95% for each variable.

These outputs were used to assess the strength and statistical significance of the relationship between each variable and ROE. Additionally, the bottom section of the table reports model diagnostics, including sigma values, rho, and R-squared statistics (within, between, and overall), which measured the model's goodness-of-fit.

Table 4.5: Regression Results Evaluating the Impact of COVID-19 on ROE

ROE	**Coefficient**	**Standard error**	**z**	**p>z**	**[95% conf. interval]**	
NPM	.5862107	.1503975	3.90	0.000	.291437	.8809844
DE	2.019062	.8028757	2.51	0.012	.4454549	3.59267
ROA	1.20572	.1984881	6.07	0.000	.8166908	1.59475
DY	.3761351	.3820582	0.98	0.325	-.3726853	1.124955
NOC	2.63e-07	6.07e-07	0.43	0.665	-9.28e-07	1.45e-06
CS	.0269557	.3933533	0.07	0.945	-.7440027	.797914
EMP	.0000544	.00007	0.78	0.437	-.0000829	.0001917
PC	1.23e-06	7.60e-07	1.62	0.104	-2.55e-07	2.72e-06
TOI	.036264	.0959483	0.38	0.705	-.1517912	.2243193
_cons	-13.14091	11.14364	1.18	0.238	-34.98205	8.700224
sigma_u	8.4418508					
sigma_e	3.0316291					
rho	.8857659 (fraction of variance due to u_i)					
R-squared:						
Within	0.9703					
Between	0.7836					
Overall	0.8601					

Source: Researcher's computation

Table 4.5 shows that the Hausman test was significant **(p = 0.0034),** and the p-values and coefficients were used to assess the association between the variables in this study.

The was a positive relationship between EMP and ROE. This was reflected in a positive coefficient of 0.0000544 and a p-value of 0.437, which was greater than 0.05, thus statistically insignificant. Nevertheless, the direction of the relationship suggested that a decrease in EMP was likely to reduce ROE, since employee numbers influenced operational efficiency and output.

Table 4.5 also indicates that CS had a positive relationship with ROE. The coefficient was 0.0269557, and the p-value was 0.945, confirming an insignificant result. This suggested that

lower company size was associated with lower ROE. In the South African context, retail firms, particularly larger ones, experienced downturns in equity returns, possibly due to heavier overhead costs and slower adaptability to pandemic-related disruptions.

Employees (EMP) remained a key determinant of profitability within companies. However, due to the COVID-19 pandemic, many firms reduced their workforce to control costs. This strategic downsizing led to productivity challenges and contributed to a decline in ROE. These findings implied that the COVID-19 pandemic acted as a robust driver of declining financial performance.

The regression results underscored the multi-faceted nature of financial vulnerability during systemic shocks such as the COVID-19 pandemic. While some structural variables, such as NPM and ROA, showed strong and statistically significant associations with ROE, other operational factors like CS and EMP appeared to play subtler but still meaningful roles in shaping firm-level outcomes. The model explained 86% of the variation in ROE ($R^2 = 0.8601$), reflecting a strong explanatory capacity. These results highlighted that financial performance under crisis conditions cannot be understood solely through profit indicators; rather, it emerges from a complex interplay of structural, strategic, and human capital dynamics within firms. This understanding can inform resilient planning in anticipation of future disruptions.

4.4.4 Impact of COVID-19 on EPS

This section presents the regression output addressing the second research objective, which sought to assess the impact of the COVID-19 pandemic on the financial performance of South African retail stores, specifically focusing on EPS as a key profitability indicator. A random-effects GLS regression model was employed for this analysis, as it accounts for both within-group and between-group variability across the panel dataset. The Hausman test result ($p = 0.038$) supported the use of the random-effects model, confirming that the assumption of uncorrelated random effects with the regressors holds, and that the model provides efficient and consistent estimates for the panel structure used in the study.

Table 4.6 summarises the model results, including coefficients, standard errors, z-values, significance levels (p-values), and 95% confidence intervals. The dependent variable in this model is EPS, and the independent variables include a mix of profitability ratios (ROE, ROCE, EBIT, ROI), market-based indicators (DY, PE), financial structure variables (DE, CS), and operational

or structural variables (EMP, PC, NOC). The inclusion of these variables allows for a multidimensional evaluation of how various internal firm-level and external market forces contributed to changes in earnings during the pandemic period.

Table 4.6: Random-Effects GLS Regression Results – Impact of COVID-19 on EPS

ROE	**Coefficient**	**Standard error**	**z**	**p>z**	**[95% conf. interval]**
ROE	102.7024	22.5667	4.55	0.000	58.4725 – 146.9322
DE	-360.9177	90.3077	-4.00	0.000	-537.9175 – -183.9180
DY	-25.2611	46.7119	-0.54	0.589	-116.8147 – 66.2926
PE	3.4473	25.7857	0.13	0.894	-47.0918 – 53.9863
ROCE	-128.0952	40.1103	-3.19	0.001	-206.7099 – -49.4804
EBIT	-32.6521	30.0266	-1.09	0.277	-91.5032 – 26.1990
CS	98.3232	26.7699	3.67	0.000	45.8551 – 150.7912
EMP	-0.0096	0.0054	-1.79	0.073	-0.0201 – 0.0009
PC	0.0001	0.0001	1.11	0.269	-0.0001 – 0.0002
ROI	-0.3682	0.3988	-0.92	0.356	-1.1498 – 0.4135
NOC	0.0001	0.0001	1.37	0.170	-0.0001 – 0.0003
_cons	-654.6977	675.6786	-0.97	0.333	-1979.003 – 669.6080
sigma_u	**328.2092**				
sigma_e	**383.0701**				
rho	**0.4233**				(fraction of variance due to u_i)
R-squared (within)	**0.8661**				
R-squared (between)	**0.4530**				
R-squared (overall)	**0.6196**				

Source: Researcher's computation

The regression results indicated that several variables had statistically significant relationships with EPS during the COVID-19 period. Notably, ROE, CS, and ROCE were all significantly associated with changes in EPS at the 1% level ($p < 0.01$). ROE and CS exerted strong positive effects on EPS, suggesting that higher equity returns and more stable capital structures contributed positively to firm performance.

Conversely, the DE and ROCE had significant negative effects on EPS, indicating that higher leverage and reduced capital efficiency adversely affected earnings during the pandemic. EBIT, DY, and the PE did not exhibit statistically significant relationships with EPS, reflecting the market volatility and uncertainty in investor returns that characterised the crisis period.

Of particular interest was the role of PC, which displayed a positive coefficient (0.000065) but did not reach statistical significance ($p = 0.269$). Although this suggested a theoretical positive association with EPS, the lack of significance implied that fluctuations in production capacity alone did not have a measurable impact on earnings during the pandemic. This was likely due to widespread lockdowns and operational disruptions that constrained output regardless of available production scale. While PC was theoretically linked to efficiency and revenue generation, its effect was hindered by broader structural constraints imposed during the COVID-19 period.

These findings aligned partially with value investing theory, which posits that undervalued assets attract long-term investors during economic downturns. However, the observed decline in production and earnings during the pandemic underscored a real limitation on the ability of even undervalued firms to generate returns when confronted with systemic shocks. The regression model's overall explanatory power ($R^2 = 0.6196$) confirmed an average-to-moderate correlation between the selected variables and EPS.

The regression analysis revealed that while firm-level fundamentals such as ROE and CS significantly influenced earnings performance, systemic shocks like the COVID-19 pandemic disrupted traditional predictors such as production capacity. The mixed results underscored the complexity of financial performance under crisis conditions, where operational efficiency is insufficient in the absence of systemic resilience. These insights suggested that South African retail stores' recovery and growth post-pandemic depended not only on internal financial management but also on their adaptability to external shocks and future disruptions. A strategic shift towards agile, diversified, and digitised business models was necessary to stabilise EPS in the face of future uncertainties.

4.5 Chapter Synthesis

This chapter analysed the impact of COVID-19 on the financial performance of JSE-listed South African retail stores. Beginning with descriptive statistics, the chapter highlighted the variation in firm characteristics and operational structures relevant to financial outcomes. The multicollinearity assessment confirmed interdependencies between variables, which supported the need for careful model specification. The core of the chapter was the regression analysis, which examined key performance indicators such as ROA, Tobin's Q, ROE and EPS, and their associations with firm-level and structural variables. The results showed that no single factor explained performance. Instead, outcomes were shaped by the combined influence of CS, operational capacity and systemic disruptions. The chapter demonstrated that retail firms' financial performance during the pandemic was the product of internal dynamics and external constraints.

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter presents the dissertation conclusion. It begins by synthesising the results presented in Chapter 4. The contributions and limitations of the study are then outlined, highlighting its relevance to academic literature and practical retail management. The chapter proceeds to present conclusions drawn from the research and offers targeted recommendations for government, policymakers, and retail managers. Finally, suggestions for further research are provided to guide future scholarly work on the financial impact of pandemics in the retail sector.

5.2 Results Synthesis

This section synthesises the research in light of the research objectives and the existing literature, indicating how the study aligned with and extended current knowledge.

5.2.1 Financial performance indicators before and after COVID-19

The study used ROA and Tobin's Q as proxies for financial performance across the pre-, during-, and post-pandemic periods. The results revealed that NPM had a positive but statistically insignificant association with ROA, aligning with prior studies that emphasised profitability as a core driver of asset efficiency (Marimuthu, Mvunabandi & Maama, 2023). The relationship between PC and ROA was also positive but insignificant, suggesting that despite theoretical expectations of improved performance with increased capacity (Hartono & Robiyanto, 2023), returns remained constrained during pandemic conditions.

This result diverged from traditional firm performance theory, which holds that higher productive capacity leads to operational leverage (Mgilane, 2023). The results, therefore, extend the literature by highlighting a disruption in the PC–ROA relationship under crisis conditions, signalling a need for context-sensitive performance models in times of systemic shocks.

Regarding Tobin's Q, a negative association with NOC was observed, though not statistically significant. This confirms earlier assertions that market-based indicators are more vulnerable to

investor sentiment and exogenous shocks than accounting-based ratios (Shen et al., 2021). The results also supported evidence from Marimuthu et al. (2023), who found that retail stock valuations in South Africa declined sharply during lockdown phases. However, this study adds knowledge by demonstrating that the trend persisted even as restrictions eased, indicating structural lag effects on investor confidence.

5.2.2 Overall impact of COVID-19 on financial performance

The regression model identified ROE, CS, and ROCE as statistically significant predictors of EPS during the pandemic. ROE had a strong positive effect, consistent with firm valuation models that associate shareholder returns with earnings expansion (Mgilane, 2023). Similarly, the positive influence of CS on EPS reflects stability through optimal capital allocation, confirming insights from studies on retail capital structuring in emerging markets (Aliamutu, Bhana & Suknunan, 2023).

Conversely, DE and ROCE showed significant negative effects on EPS. High DE ratios reflected financial distress during economic shocks, a pattern also observed in the analysis of South African retail failures post-2020 (Mamaro & Mabandla, 2022). The results affirmed existing theory while extending the understanding of risk exposure by quantifying the specific impact on EPS rather than broader financial distress measures.

While DY and PE did not yield statistically significant results, their inclusion supported the literature on capital market volatility, particularly the challenges investors face in pricing earnings under uncertainty (PwC, 2021). The results suggested that traditional market signals became unreliable during the pandemic, requiring investors to adopt more cautious or diversified valuation strategies.

PC, while positively correlated with EPS, was not statistically significant. This reinforced the notion of the limited utility of capacity expansion strategies during system-wide disruptions (Ivanov, 2020; Ozili & Arun, 2020). The study contributed new empirical evidence by quantifying this limitation through EPS-focused modelling, adding depth to earlier insights about operational constraints during COVID-19 (Bhorat et al., 2021).

5.2.3 Financial performance model for future disruption scenarios

The regression outputs indicated that while certain financial ratios remained predictive under normal market conditions, their explanatory power shifted significantly during crises. The study found moderate-to-strong R^2 values across the models, validating the suitability of the selected variables while also highlighting the limits of conventional metrics during systemic shocks.

This aligns with the value investing perspective and subsequent research that argues downturns can reveal sustainable business fundamentals (Nkala, 2021). However, the current study found that even fundamentally strong firms experienced performance decline due to external constraints, suggesting that value investing models must integrate macro-disruption variables such as public health shocks, logistics interruptions, and lockdown policy dynamics.

The proposed performance model integrates internal financial indicators (e.g. ROE, CS, ROCE) and contextual stressors (e.g. NOC, lockdown intensity), contributing to a holistic resilience framework for retail enterprises in South Africa. This expands earlier models such as the financial fragility index (Kgoroeadira et al., 2019, as cited in Marimuthu et al., 2023), offering an evidence-based tool to inform retail strategy in volatile environments.

5.4 Study Limitations

Notwithstanding the study's contributions, there are several limitations to be acknowledged. First, the research relied exclusively on secondary financial data, which restricted the conclusions to observable financial performance indicators of retail stores. As the study aimed to ensure the reliability and integrity of data, it focused solely on JSE-listed companies, given that their financial statements are publicly available and subject to external audit. While this enhanced data credibility, it also excluded smaller or unlisted retail entities that may have experienced the pandemic differently. Furthermore, the scope of the study was confined to analysing the impact of COVID-19 on financial performance in the South African retail sector, without incorporating qualitative dimensions such as managerial perspectives or operational strategies. Finally, as the dissertation is presented in English, language may pose a barrier to accessibility or interpretation in contexts where English is not the primary medium of academic engagement.

5.5 Conclusions

The results of this study demonstrated that the COVID-19 pandemic exerted a profound and adverse influence on the financial performance of JSE-listed retail firms in South Africa. Rather than merely affirming this effect, the study's results elucidated the pathways through which lockdowns, public health regulations, and shifts in consumer behaviour led to reductions in revenue, profitability, and efficiency metrics such as ROA, ROE, and EPS. These conclusions were supported by robust statistical estimates from random and fixed effects models and reinforced the theoretical position that financial outcomes during systemic crises are heavily mediated by exogenous disruptions to supply and demand (Naudé, 2020).

The study's results confirmed that firms trading in non-essential goods were disproportionately affected, aligning with the view that sectoral exposure to economic shocks is unequally distributed (Du Plessis, 2020; Maluleke, 2021). This pattern provided evidence that retail sub-sectors differ in their capacity to withstand systemic risk, extending the theoretical arguments presented by Radonic and Binns (2021) regarding vulnerability heterogeneity.

The inclusion of production capacity as an explanatory variable allowed the study to test whether firms with greater output potential were more resilient during the pandemic. Although this variable did not show a significant statistical effect, its theoretical relevance remains noteworthy. The insignificant association between production capacity and performance measures such as EPS and ROA reflected the limitations of capacity-led recovery models under conditions of widespread systemic constraint, lending empirical weight to the critique that operational scalability is insufficient when mobility, labour, and consumption are simultaneously restricted (Ivanov, 2021; Queiroz et al., 2020).

Another conclusion drawn from the study concerns the differential explanatory power of the panel regression model across retail firms. While the model demonstrated high within-firm explanatory capacity, indicating its robustness in capturing financial variation over time, its explanatory power between firms was more modest. This suggested that unobserved firm-level heterogeneity, such as digital maturity or supply chain integration, may influence pandemic resilience in ways not fully captured by the current model specification. The relatively higher within-group R-squared value confirmed that firm-level financial dynamics, rather than broader market factors, accounted for

most of the observed variation. This affirmed the value of firm-level data in crisis analysis and supported micro-level modelling of economic disruption (Fourie & Burger, 2022).

The results indicated that CS and ROCE were statistically significant predictors of EPS, suggesting that liquidity and investment efficiency were crucial to financial resilience. These results extended existing finance literature by quantifying these effects in a crisis context and provided practical insights for investor assessment and managerial decision-making during future disruptions.

The results suggested implications for theory and practice. For theory, the results confirmed that while core financial indicators remain valid during crises, their predictive power may be altered by exogenous factors, a point not fully accounted for in traditional financial performance models. For practice, the results emphasised the importance of strategic adaptability, with firms adjusting their operations or revenue streams faring better. While the study did not directly measure digital adaptability or supply chain restructuring, its results reinforced existing research suggesting that agility and diversification are essential traits of resilient firms (Arvanitis, 2020; Queiroz et al., 2020).

The results confirmed the pandemic's negative financial impact, identified the uneven distribution of this impact across retail sub-sectors, and provided empirical evidence to support theoretical views on resilience. These conclusions invite future research to incorporate firm-level adaptive traits into models of crisis performance and to test these dynamics across sectors and geographies.

5.6 Recommendations

5.6.1 Policy recommendations

The government and regulatory bodies should adopt forward-looking policy frameworks to mitigate the economic effects of future pandemics. Lessons from the COVID-19 experience underline the need for pre-emptive planning to ensure institutional readiness for similar crises. Strategies should include enhanced support mechanisms for the retail sector, including relief programmes, regulatory flexibility, and coordinated communication. Additionally, the promotion of local procurement and community-based retail initiatives is advised, as such approaches may offer greater adaptability and resilience during localised disruptions.

5.6.2 Managerial recommendations

Retail managers must implement robust financial planning strategies to enhance resilience in the face of future economic shocks. This includes establishing contingency reserves, diversifying product offerings to include essential items such as food and pharmaceuticals, and investing in operational agility. Managers are also encouraged to develop comprehensive crisis management plans, incorporating emergency liquidity protocols, adaptable inventory systems, and enforceable health and safety standards. **These measures will position retail firms to absorb the financial stress associated with systemic crises.**

5.6.3 Suggestions for further studies

The study acknowledges that multiple interrelated variables influenced the relationship between COVID-19 and the financial performance of retail businesses. These included digital maturity, supply chain architecture, consumer demographics, and government response. Therefore, future research should examine these moderating and mediating factors to offer an understanding of organisational vulnerability and resilience. Comparative studies across regions and sectors could also enhance the generalisability of results.

5.7 Chapter Synthesis

This chapter drew together the research results, theoretical contributions, limitations, and recommendations, forming an understanding of the impact of COVID-19 on the financial performance of retail firms in SA. The results addressed the study's objectives, demonstrating that pandemic-related disruptions significantly affected profitability, earnings, and returns, especially among firms not trading in essential goods.

By interpreting these results through the lens of established financial and crisis response theories, the chapter showed how the study aligned with and extended existing literature by offering sector-specific, firm-level evidence and highlighting operational variables such as production capacity. The chapter also emphasised the differentiated financial effects across retail sub-sectors, pointing to the value of more granular models in future research.

The limitations section provided important context for interpreting the results, while the recommendations translated academic insights into actionable strategies for government and retail managers. The chapter advanced the study's contribution to understanding financial resilience in times of systemic disruption.

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