The impact of COVID-19 on the financial and sustainability performance of insurance companies in South Africa.

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by

Siphesihle Charles Zungu (21633741)

Supervisor: Dr Haruna Maama

Co-Supervisor: Dr Jean Damascene Mvunabandi

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DECLARATION

I, Siphesihle Charles Zungu, declare that

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Siphesihle Charles Zungu (21633741) has done and submitted this research work to the Durban University of Technology, Faculty of Accounting and Informatics, Department of Financial Accounting, with our approval as Durban University of Technology Supervisors.

Dr Haruna Maama		**21 June 2024**
Name of Supervisor	**Supervisor's Signature**	**Date**

Dr Jean Damascene Mvunabandi		**21 June 2024**
Name of Co-supervisor	Co-s**upervisor's Signature**	**Date**

DEDICATION

I want to dedicate this thesis to my parents, Jacob Zungu and Nomthandazo Zungu, for their support throughout this research project. Thank you for instilling in me the belief that hard work and dedication are essential for success. Their constant encouragement has been a guiding force throughout my journey. I also want to dedicate this to my siblings, Makhosi Zungu, Khethiwe Zungu, Msawakhe Zungu and Kholeka Zungu, whose love and moral support have been priceless. A special mention goes to my son, Zengokuhle Zungu. Your presence in my life has been a shining light.

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ABSTRACT

The study aimed to investigate how the coronavirus 2019 (COVID-19) pandemic affected insurance companies' financial and sustainability performance in South Africa. This comes from the fact that with the occurrence of COVID-19, insurance companies had to do two things at the same time, which were adaptability and resilience. For the insurance industry it is very essential to show resilience in the face of uncertainty, which became even more important since the COVID-19 pandemic. The other thing is growing pressure to follow modern sustainability standards.

In a business world that is always shifting and full of risks and problems, it is important for insurance companies to have solid strategies that not only help them deal with problems as they come up but also help the industry grow in the long-term. The COVID-19 pandemic made resilience even more important by forcing businesses around the world to quickly adjust to new situations, like changes in customer needs, economic downturns, and government reactions. To accomplish the research objective, the study used a secondary data. The study used a quantitative method that was in line with the positivist research philosophy. The sample used for the study was made up of 37 insurance companies that were registered with the Financial Sector Conduct Authority (FSCA) of South Africa. To get the environmental and social performance from the integrated annual reports of registered insurance businesses from 2017 to 2022, a quantitative content analysis was used. These reports were obtained from the websites of the respective companies. Regression analysis is used in this research to estimate the impact of COVID-19 on the sustainability and financial performance of the firms.

The research found a statistically significant and positive association between Return on Assets (ROA) and COVID-19 among South African insurance companies. The link was shown by a positive coefficient of 2.642 and a p-value of 0.000. This shows that insurance companies effectively responded to pandemic-related disruptions. However, a significant adverse link was found between the COVID-19 and return on equity (ROE). This highlights a potential roadblock to insurance firms' financial success, as it was evidenced by negative coefficient of -0.15 and a p-value of 0.008. Furthermore, the negative correlation between Tobin's Q and COVID-19, demonstrated by a coefficient of -2.55 and a p-value of 0.793, reveals the industry's complicated dynamics, although being statistically insignificant. Likewise, a positive and statistically significant relationship was found between COVID-19 and both social responsibility and environmental sustainability performances, with coefficients of 2.548 and a p value of 0.000, and 0.782 and a p value of 0.000 respectively. This research advances the understanding of industry stakeholders, governments, and academics by providing insights into strategic decision-making and encouraging flexibility in the face of future uncertainty. Aside from its immediate focus, this study has significant implications for South

Africa's economic climate, giving a nuanced perspective on the challenges and opportunities inherent in the insurance market. Therefore, it increases the country's overall resilience and fosters growth.

Keywords: COVID-19, financial performance, sustainability performance, insurance companies, South Africa

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

ARDL	autoregressive distributed lag
COVID-19	coronavirus 2019
CSR	corporate social responsibility
DOLS	dynamic ordinary least squares
EIOPA	European Insurance and Occupational Pensions Authority
ESG	environmental, social, and governance
FAIS	financial advisory and intermediary services
FMOLS	fully modified ordinary least squares
FSCA	Financial Sector Conduct Authority
GDP	gross domestic product
IBCO	Insurance Brokers Council of South Africa
IC	incurred claims
JSE	Johannesburg Stock Exchange
LEV	leverage
LIQ	liquidity
LOS	loss ratio
LTIA	Long-Term Insurance Act 52 of 1998
MPT	modern portfolio theory
PA	Prudential Authority
PRA	Prudential Regulation Authority
RBT	Resource Based Theory
RBV	resource-based view
ROA	return on assets
ROE	return on equity
SARB	South African Reserve Bank
SD	Sustainable development
ROS	return on sales
STIA	Short-Term Insurance Act 53 of 1998

CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter provides a detailed discussion of the research background. In addition, it presents the research problem, aim, objectives, and questions. This chapter also briefly outlines the study's contribution and the dissertation structure. The following section starts with the background of the research issues and problem statement.

1.2 Background

The world is experiencing a series of disruptions, including wars, economic crises, and health disasters, which are significantly impacting human life and leading to detrimental economic and political effects (Zhang and Chatterjee, 2023). Lately, the fast spread of the coronavirus disease (COVID-19) has turned into a worldwide problem. This crisis has revealed significant disparities in the healthcare and economic governance systems, logistics, and even political structures of different nations (Vlachos, 2021). A pandemic of pneumonia started in Wuhan City, Hubei Province, China in December 2019 (Mohan and Nambiar, 2020). The result was the development of a respiratory ailment called severe acute respiratory syndrome coronavirus 2 (SARS CoV 2) (Mohan and Nambiar, 2020). In March 2020, the World Health Organisation (WHO) formally announced that COVID-19 had reached the status of a worldwide pandemic. COVID-19 resulted in global instances of respiratory illnesses fatalities, and substantial financial impacts (Shevchuk, Kondrat and Stanienda 2020). Shah, Suthar and Pandya (2023) assert that the primary means of spreading the COVID-19 pandemic is by droplets between persons, rather than through animals.

The COVID-19 pandemic has had a huge impact on the global economy, intensifying existing issues. According to Nguyen (2023) the pandemic has caused a substantial and wide-ranging impact on numerous countries and sectors. It affected most sectors in terms of both financial and sustainability performance. One of those sectors is the insurance sector, this sector was at the forefront of the pandemic because insurance firms are directly engaged in the management of risks, both for people and businesses (Nguyen, 2023). This may have made them especially susceptible during the COVID-19 pandemic. Additionally, it impeded the process of making decisions in the volatile global circumstances, particularly with regards to the selling of goods

and services. The economic implications included the interests of several parties, such as workers, clients, shareholders, suppliers, and the public. Consequently, firms faced increased pressures to protect their interests (Tariq, Yasir and Majid, 2020). Stakeholders evaluate the efficacy of organisations in times of crisis, such as the global situation. The pandemic presented a substantial challenge to companies' dedication to social and environmental responsibility within the insurance sector. Therefore, it is imperative that businesses uphold their moral obligations by providing enough assistance to lessen the pandemic's effects on impacted areas while still fulfilling stakeholder expectations.

Performing an analysis of the impact that the COVID-19 has had on the financial and sustainability performance of the industry is of the highest significance. Considering the undeniable significance of insurance in modern economies, a historical reality that can be traced back for centuries, this assessment becomes crucial. Abdelrahman and Salam (2020) stated that insurance is a vital need for carrying out commercial activities and participating in entrepreneurial pursuits. Nevertheless, insurance serves a broad social function that goes beyond its role in business and protecting a substantial amount of the country's assets. Distribution is the primary means by which an individual's pain is spread among many, and a community's suffering is shared with other communities (Campbell, 2020). Consequently, there is an increase in catastrophes and the possibility of their restoration. The insurance business is commonly acknowledged as an integral part of a nation's risk management strategy in several countries. It serves a function in maintaining stability and enabling financial transactions (Kampouris, 2022). The factors that influence insurance companies' performance are very significant owing to their function as middlemen. Moreover, the increasing prevalence of climate-related catastrophes and heightened awareness of environmental hazards have rendered sustainability essential to the insurance sector (Kampouris, 2022). This research evaluates the equilibrium between financial performance and environmental and social sustainability in the industry, offering critical insights into how insurance firms may preserve economic resilience while alleviating long-term risks linked to climate change and environmental degradation.

It is crucial to emphasise that most companies' financial and sustainability performances were significantly impacted by the COVID-19. Moreover, it is essential to emphasise that sustainability has gained more attention in the recent years because of this global concern (Scharrer 2023). Stakeholders are now recognising environmental and social issues as crucial factors in how they make decisions. Van Wynsberghe (2021), defines sustainability as the capacity to fulfil the needs of the current generation while ensuring that future generations can fulfil their own needs. The COVID-19 pandemic poses many risks to South African insurance businesses' social and environmental sustainability. Given its effect on the South African economy, the outbreak may have first shifted the focus and funding from environmental sustainability projects. Insurance companies might give short-term financial stability top priority above long-term sustainability goals in times of economic instability (Kanitkar and Songola, 2022). Moreover, Getzmann, Digutsch and Kleinsorge (2021) disclosed that the pandemic may force individuals to temporarily overlook significant environmental concerns as their attention is primarily directed at public health and safety. An environmental concern that might be causing damage is the rising use of disposable plastics and the disposal of medical waste. The financial fallout from COVID-19 could worsen social inequality, therefore presenting difficulties for insurance companies in carrying out their social obligation towards every person. Insurance companies might find it difficult to sufficiently meet the needs of their customers given the rising unemployment rates and expansion of economic inequalities. The COVID-19 pandemic poses many risks to South African insurance businesses' social and environmental sustainability.

According to Ngurah, Widnyana and Sujana (2023), financial performance refers to the evaluation of a business's effectiveness in utilising resources to generate revenue. The financial success of a company is evaluated to determine its financial condition and overall monetary stability. Primarily, the heightened occurrence and intensity of health-related claims may place strain on the underwriting performance of insurance companies, namely within the health and life insurance industries (Ige-Gbadeyan and Johannes Swanepoel, 2023). Moreover, the economic consequences resulting from the pandemic can result in elevated unemployment rates and reduced purchasing power of consumers, thus affecting the amount of money collected in premiums for different types of insurance. Addition to that, the increased instability caused by the worldwide health crisis could impact the investment portfolios of insurance firms, so impacting investment returns and, subsequently, their overall financial well-being (Ozturk and Karabulut, 2020). The pandemic has precipitated a major surge in awareness about the need

for insurance coverage, particularly for unforeseen circumstances. This heightened awareness may result in a higher demand for specific insurance products.

The COVID-19 pandemic drastically knocked off world economic systems, and the insurance industry was not excluded. According to Liedtke (2021) insurance companies, acting as financial mediators and risk managers, were assigned to absorb the financial shock caused by the pandemic through rising claims, decreased investment returns, and policyholder relief actions. These difficulties immediately impacted insurers' solvency, liquidity, and profitability among other aspects of their financial performance. Simultaneously, the pandemic underlined the need of sustainability in long-term business plans, especially in view of growing social and environmental concerns (Gatto, Drago and Ruggeri, 2023). Sustainability is no more a choice given the increasing frequency of climate-related calamities, which insurers are frequently called upon to handle; it is rather a necessary factor of risk management and future financial stability. Therefore, the focus of this research is the interaction among the pandemic, the financial situation of the insurance sector, and industry alignment with sustainability objectives.

When it comes to corporate finance, there has been a lot of focus on studying both financial and sustainability performance. This is because economic, social, and environmental factors all have an impact on these areas. According to Al-Shammari, Banerjee & Rasheed (2022), there has been a growing recognition in recent decades that a company's impact and responsibilities go beyond just financial performance. For instance, stakeholders, including investors, consumers, and regulatory agencies, are now increasingly asking for a comprehensive evaluation of a company's performance. In their view, this evaluation should take into account not only its financial health but also its sustainability efforts. The growing awareness of environmental and social issues, along with the global conversations about the significance of sustainable business practices, has led to a significant shift in corporate values (Cerciello, Busato, & Taddeo, 2022).

The primary emphasis has been on the South African insurance sector, as South Africa witnessed significant impact during the times of COVID-19 pandemic. As of January 2022, the nationwide count for COVID-19 cases exceeded 3.5 million, with a total of 93,551 deaths (Weir-Smith, Mokhele and Dlamini, 2022). The insurance business and governments globally are increasingly seen as sources of hope for those looking for protection against devastation. The enormous increase of COVID-19 infection cases has overwhelmed several countries, and

it was increasing quickly. Shen (2023) reported that South African life insurance disbursed 1,023,083 death claims of R47.58 billion from 1 April 2020 to 30 March 2021, during the first and subsequent waves of a pandemic. When compared to the same period in 2019-2020, the number of deaths that were caused by COVID-19 rose by 43%, and this led in a rise in the value of the rand. Considering this situation, comprehending the intricacies of the correlation of the COVID-19 pandemic and the financial and sustainability aspects of insurance business performance have important implications for officials, industry professionals, and researchers.

The pandemic has shown both weaknesses and strengths in insurance companies operating in different regions, leading to a thorough evaluation of their strategies, risk management techniques, and ability to respond to market changes (Rahmi and Sumirat, 2021). One way to understand how resilient an industry is when faced with tough times is to look at how key performance measures like return on assets (ROA) and return on equity (ROE) were affected by the pandemic. In addition, considering its interconnection with worldwide monetary systems and its vital function in risk management for people, groups, and communities, a comprehensive evaluation of the pandemic's effects might disclose openings to enhance readiness, adaptability, and regulatory structures.

Having introduced the background of the research and motivation for embarking on this research study, the next section will now clarify the problem statement that will navigate the way to the pure purpose so as to point out the research issue of this dissertation.

1.3 Problem statement

Insurance companies are important in every nation since they provide protections for people and possessions from unexpected hazards, insurance firms are crucial in helping nations' economic stability to be maintained. But they often suffer during the previous catastrophic events to properly safeguard the economy and people, therefore exposing them to financial stress (Przybytniowski *et al.* 2022). Their vulnerability not only reduces their power to properly fulfil their sustainability obligations but also makes it more difficult for them to resist global crises, in situations where their services are most crucial. Because of the weight of such crises, insurance firms sometimes give short-term earnings top priority over long-term sustainability, therefore neglecting significant sustainability initiatives. Although earlier research has shown how much catastrophic occurrences influence insurance companies' sustainability initiatives and financial success, there is limited research that has been done on the impact of the most recent catastrophe, COVID-19, on the insurance industry, particularly within the borders of

South Africa. The lack of knowledge about the full extent of the influence COVID-19 has had on insurance firms' sustainability initiatives as well as their financial performance inspired this study. Although the pandemic touched many different industries, it is unknown exactly how it affected the financial health of the insurance business and its capacity to achieve sustainability targets. Therefore, this study's main aim is to investigate the recent catastrophic impact of the COVID-19 pandemic on the financial and sustainability performance of insurance companies that operate in South Africa.

Although prior investigations have shown the major impact of catastrophic events on the financial and sustainability performance of insurance companies (Munasinghe, 2020; Mohammad, 2021), limited research on the effects of the COVID-19 pandemic on the financial and sustainability performance of South African insurance firms. Nonetheless, according to the study that was conducted by Worku and Mersha (2020), COVID-19 negatively impacted Ethiopia's insurance companies, in line with the results of Njegomir and Demko-Rihter (2021) and Johncally and Shafau (2022). Haque, Mohona, Sultana and Kulsum (2021) and Zahra, Baehaqi, and Harto (2023) revealed contradicting findings indicating that COVID-19 improved insurance businesses' financial performance. These differences underline the complexity of the impact of the COVID-19 pandemic on the financial performance of insurance companies, therefore emphasising the necessity of further study. Earlier studies have not explored how the pandemic affects insurance firms' sustainability performance.

1.4 Research aim and objectives

1.4.1 Research aim

The current study examined how the COVID-19 pandemic affected South African insurance companies' financial and sustainability performance.

1.4.2 Research objectives

To achieve the research aim, the following objectives were formulated:

1. Examine the impact of the COVID-19 pandemic on the financial performance of the insurance companies in South Africa
2. Determine the impact of the COVID-19 pandemic on the environmental sustainability performance of the insurance companies in South Africa

3. Determine the impact of the COVID-19 pandemic on the social sustainability performance of the insurance companies in South Africa

1.5 Research questions

1.5.1 Primary research questions

In line with the research aim, the primary research question was

How did the COVID-19 pandemic affect South African insurance firms' financial and sustainability performance?

1.5.2 Secondary research questions

In line with the research objectives, the secondary research questions were

1. What impact did the COVID-19 pandemic have on the financial performance of South African insurance companies?
2. What impact did the COVID-19 pandemic have on the environmental sustainability performance of South African insurance companies?
3. What impact did the COVID-19 pandemic have on the social sustainability performance of South African insurance companies?

1.6 Significance of the study

A comprehensive analysis is conducted to assess the impact of the COVID-19 pandemic on the financial and sustainability performance of insurance firms operating in South Africa. It is essential to acknowledge the importance of financial institutions, particularly insurance companies, in facilitating and safeguarding economic activity in any nation. The insurance companies have also been affected by the worldwide economic crisis resulting from the COVID-19 pandemic. Considering the uncertainties surrounding the consequences of the pandemic for African insurance firms, conducting research in this area becomes essential. This form of study will benefit immensely to various stakeholders. For instance, lawmakers will learn how to make good arrangements to deal with economic downturns and make the economy more resilient. Insurance companies themselves will benefit from this study by recognising the problems they had faced and coming up with creative ways to solve them, which will protect their long-term success.

Furthermore, this research will help to identify best practices for promoting sustainable business operations in the midst of the pandemic, therefore addressing a major issue for the insurance industry. By understanding how COVID-19 impacts financial and sustainability performance and modifying their approach, insurance firms may better retain their financial and social responsibilities. Knowing more about how this pandemic has impacted insurance firms may also help consumers make better judgements on their own financial well-being and risk management. This study serves as a lighthouse guiding many parties over the choppy waves of the COVID-19 pandemic. Not only what has been discussed but also the financial situation of insurance firms is tightly related to the general state of the banking industry. The results of this study could potentially be of great use to financial institutions beyond the insurance industry.

Having discussed the brief background of the research, research issue, questions and objectives, it is now critical to give a brief summary of key contents addressed in each chapter. This dissertation is organized into five chapters.

1.7 Chapter outline

Chapter 1: The background of research was presented in this chapter. Additionally, this chapter outlined the study's aim and objectives and introduced the study's research problem, which revealed the research gap that inspired the researcher. In addition to discussing the research questions and significance of the investigation, this section is currently outlining the dissertation's structure.

Chapter 2: This chapter will review the relevant literature and research on the COVID-19 pandemic, sustainability and financial performance. The chapter will also discuss the theoretical underpinnings of the study as well as the empirical literature review. Finally, the chapter will present the conceptual framework of the study.

Chapter 3: This chapter will provide an overview of the research tools and methodology that will be utilized to achieve the research aim and objectives. Specifically, issues to be discussed in this chapter will include the research design, the research paradigm, the data collection method, population, sampling, and sample size. The chapter will further describe the data collection source and data type, data analysis method, data validity and reliability, and ethical considerations.

Chapter 4: This chapter will present the results and discuss the findings considering the current state of the industry.

Chapter 5: This chapter will present the summary of the major findings, and conclusions and highlights potential recommendations for insurance companies, the government, and policymakers in South Africa.

1.8 Chapter summary

The researcher delved deeply in the background of the study in this chapter, underlining the historical context of the COVID-19 pandemic and its broad consequences on world businesses, especially insurance. Emerging as a major global economic disruptor, the COVID-19 pandemic puts more pressure on businesses to maintain social and environmental duties as well as to adjust financially. Understanding insurance's importance in national economies, the researcher therefore looked at how the outbreak affected the financial and environmental performance of the insurance sector. The chapter explained the research problem, aim objectives, and questions directing the investigation. Additionally, the layout of the dissertation was also outlined, laying the foundation for the following chapters on the research topic.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature relevant to the study on the impact of the COVID-19 pandemic on the financial and sustainability performance of the South African insurance industry. The section will examine the insurance industry worldwide before turning attention to viewpoints unique to South Africa. The researcher will critically examine several ideas on the performance of insurance companies and the variables affecting their sustainability and financial performance using an analysis of the literature. After that, the chapter explains the theories underpinning the study and existing research on financial and environmental/social sustainability performance. The researcher then briefly describes gaps in these past studies, which the study aimed to address.

2.2 Conceptual review

2.2.1 Global insurance landscape

The global insurance industry is defined by fierce rivalry, mostly dominated by a limited number of prominent multinational corporations. The Insurance Information Institute reports that global insurance premiums for 2019 are estimated to exceed $6.3 trillion (Shin and Lee, 2020). According to a study done by Jun (2020), research which revealed that the largest insurance markets globally are the United States, China, Japan, the United Kingdom, and Germany. The insurance industry's performance is primarily dependent on the utilisation of technology and data analytics to enhance underwriting and risk management procedures. Volosovych *et al.,* (2022), highlight the increasing use of advanced technologies such as artificial intelligence, blockchain, and machine learning by insurance companies. These technologies enable the creation of goods and services that question established practices. Furthermore, there is a prevailing trend in the insurance industry to give importance to environmental and social responsibility. The 2019 film "Officer" emphasises the increasing significance of environmental, social factors for insurance companies on a worldwide scale. Organisations are progressively integrating environmental, social, and governance (ESG) aspects into their investment strategies and underwriting processes as they acknowledge the role of these practices in the business.

Essentially, the insurance industry provides people (either the individuals or businesses) with a way to develop financial stability by mitigating about risks associated with their own important objectives. According to Upadhyay *et al*., (2021), the insurance sector is expected to grow and modernise, technological advancements are enabling new ways of doing business and it is likely that sustainability and corporate social responsibility performance will become a larger component of company success. This shift has produced wide-ranging implications on how insurance companies do business, their economic standing, and their exposure to risks. The global insurance market has been affected in many areas by the COVID-19 pandemic. Insurance companies faced encumbrances as the claims increased, their operations were disturbed and panic about the losses and economic turbulence due to the pandemic.

2.2.2 South Africa's insurance landscape

The global financial services industry consists of many areas. The insurance business represents around 20% of it. Notably, South Africa has a 23% stake in this industry (Dayal 2023). According to Zeka and Alhassan (2024), the insurance industry in South Africa displays a notable degree of advancement and financial resilience in comparison to other African nations. The oversight and regulation of this sector has been delegated to the Financial Sector Conduct Authority (FSCA), the Prudential Authority (PA), and the South African Reserve Bank (SARB). In South Africa, there are two categories of insurance that are regulated by these governing bodies: life insurance and general insurance. The long-term coverage is quite prevalent, with short-term coverage closely following it (Horne, Gautam & Tumin, 2022). According to Kilian (2023), South Africa's major life insurance companies are Old Mutual, Sanlam, Momentum Metropolitan, Liberty Holdings, and Discovery Life. Similarly, Santam, Hollard, Old Mutual Insurance, and OUTsurance are well-known short-term insurance providers.

Ikwegbue *et al.,* (2021), believe that competition, regulatory reforms, and economic volatility during the lockdown caused by COVID-19 may have threatened the stability of South Africa's insurance industry. Firms in the market are mitigating market challenges by introducing novel products, enhancing customer service, and embracing recent technological developments. The COVID-19 pandemic has led to an unprecedented, industry-wide increase in claims in sectors from travel and health cover to business interruption insurance, significantly affecting the South African insurance market. South African insurance sector analysts expect this industry

to expand and become better since the middle class is increasing, people are becoming more aware of the importance of having insurance and new technologies continue to emerge.

2.2.3 Regulatory framework in South Africa

Regulation, as defined by Meier, Gonzalez, and Kunze (2021), refers to the systematic process that is consistently committed to. Similarly, the insurance industry is regulated to maintain stability. In order to reduce the possibility of unfair trade practices that might harm the company, the insurance industry has established uniform laws and standardised its products. Insurance regulations include non-life and life insurance policies. According to Msomi and Nzama (2023), the insurance business in South Africa has become very dynamic on a global level due to developments in insurance products. The Insurance Act, similar to the Bank Act, governs the prudential criteria that all insurers in South Africa are required to follow and provides guidelines for its interpretation (The Department of Justice and Constitutional Development of South Africa 2018). The insurance industry in the country is governed by two separate legislations, as stipulated by the South African Department of Justice and Constitutional Development (2018). The applicable statutes are the Long-Term Insurance Act (LTIA) of 1998 and the Short-Term Insurance Act (STIA) of 1998.

According to Msomi (2023), insurance in South Africa is now subject to competent regulation. To determine whether new financial service providers in South Africa are licenced or not, the FSCA assesses existing insurers to guarantee they adhere to ethical standards (Yego, Nkurunziza & Kasozi 2023). The insurance sector is continually impacted by regulatory changes that are designed to safeguard the interests of insurance providers and policyholders. These modifications are now officially specified by law. The insurance sector in South Africa, together with its regulatory authorities, relies heavily on the implementation of standardised procedures. Without these bodies, individual insurance companies may encounter instability and create their own framework of laws and regulations (Brajczewska & Raczyński, 2020).

2.2.4 Insurance categories in South Africa

As it has been mentioned above that in South Africa, insurance companies fall into two categories: short-term and long-term insurance. This area represents the wide variety of coverage choices accessible to both individuals and businesses. In this part, we will look at these two forms of insurance.

2.2.4.1 Short-term insurance

As per Kim (2023), this insurance product safeguards the clients against any loss over a period of up to 5 years, which is known as short-term insurance Some people may need insurance for shorter periods, like a few months so they can avail short-term insurance. Fei, Wang and Ma (2021) pointed out that the core target of short-term policy is to shield policyholders from accidental injuries or sickness financially. The purposes of short-term insurance are to protect vehicles, obligations, assets, and business health. Insurance products provided by short-term insurers typically have a time that spans from 30 days to 5 years and include all types of insurance, except life insurance (Fei, Wang & Ma, 2021). In addition, insurance policies may include not just vehicles and homes, but also obligations, assets, and business ventures. Perez (2021), emphasise that South Africans have the ability to safeguard their homes, automobiles, and families from financial damage without incurring exorbitant insurance premiums, especially in the event of a disaster. Short-term insurance companies must adhere to the restrictions set out by the Short-Term Insurance Act (No. 53 of 1998), as mandated by (South Africa in 2018b).

According to a study conducted by Bhatia, Bhat, and Tikoria (2021), it was found that some clients may have certain perceptions about their financial insecurity or lack of expertise in risk management when it comes to short-term insurance. Some clients may view short-term insurance as a temporary solution. They might use it when they require immediate financial protection for a short period, such as insuring a single trip or rental property. However, some people may not see it as a typical way to take risks with specific ventures or events. Instead, they view it as a strategic tool.

Table 2.1 below explains a few types of short-term insurance in SA.

Table 2.1: Types of short-term insurance

Insurance type	Coverage	Source
Car insurance	Protects against financial loss in the event of a car accident	Bojic, Braendli and Ratti (2019)
Fire insurance	Protects against damage or losses that may be incurred because of fire	Kajwang (2022)
Marine insurance	Protection against losses caused by shipping items	Thomas (2020)
Business liability insurance	Protects the policyholder against injuries to people or property	Martseniuk (2022)

Source: Author (2024)

2.2.4.1.1 Short-term insurance and COVID-19

Nayak and Bharati (2021) maintain that people were initially worried about the possibility of increased short-term health insurance premiums due to the rising hospitalisation of COVID-19 patients. However, an evaluation by AM Best, an American credit rating agency, revealed that the COVID-19 pandemic had a milder effect on premiums than first expected (Wise, 2018). The anticipated impacts of COVID-19 claims have been mitigated because of a decrease in claims unrelated to COVID-19 (Mason, 2023). The pandemic has had several consequences for general insurance, notably exerting a substantial impact on travel-related policies.

As per Arun Pathak, Chandrasekaran and Annamalai (2023), the implementation of lockdown measures has significantly reduced the volume of people using the roadways, resulting in an unprecedented decline in claims for automotive accidents. Similarly, there has been a decrease in theft occurrences, which might be related to less movement due to lockdown constraints.

2.2.4.2 Long-term insurance

Haaland, Wright, Tufto and Ratikainen (2019) argue that long-term insurance is meant to provide a dependable financial asset for people throughout their retirement. Chen, Fuino, Sehner and Wagner (2022) add that long-term insurance offers a single payment in the case of the policyholder's death or long-lasting inability to function. Regulated by the Long-Term Insurance Act 52 of 1998 (South Africa, 1998a), long-term insurance encompasses life insurance, burial expenses, retirement annuities, and long-term disability insurance. If an individual sustains injuries in a motor vehicle collision and is unable to engage in employment, it may be necessary to get long-term disability insurance.

Upon the policyholder's demise, beneficiaries are offered the choice of receiving regular instalments or a lump sum payment to assist in settling the outstanding financial obligations of the deceased insured. Long-term insurance is less taken out due to the elevated costs associated with the bulk of plans and their complexity (Ma & Xu, 2022).

Table 2.2 below explains a few types of long-term insurance

Table 2.1: Long-term insurance

Insurance type	Coverage	Source
Life insurance	Protects the policyholder against death or permanent incapacity	Musthofa (2022)

Funeral insurance	Ensures the insured and their dependents in the case of the insured's death	Nayak (2019)
Retirement annuity	Pays a monthly benefit to the insured after they reach retirement age	Nyangarika and Bundala (2020)

Source: Author (2024)

2.2.4.2.1 Long-term insurance and COVID-19

The pandemic's high death toll has significantly impacted the availability of life insurance and annuity coverage. This has been an ongoing issue for insurance firms from the start of the pandemic (Machnes & Shachmurove, 2022). The rising number of premature deaths results in a rise in the burden of mortality risk for various types of life insurance. The degree of these impacts is determined by the age distribution and geographic locations of policyholders (Kuitto & Helmdag, 2021). Life insurance often offers coverage against the potential hazards of mortality, commonly in the form of life-contingent annuities. (Kuitto & Helmdag, 2021) have highlighted that the mortality resulting from the pandemic has led to a decrease in the projected lifetime probability of receiving annuities in a regular payment format. The hazards of mortality and longevity slightly counteract each other, acting as a protective mechanism. Therefore, the pandemic has a significant and diverse effect on the mortality risk faced by life insurance companies, which is determined by the specific mix of policies they provide

Njegomir and Demko-Rihter (2021), have highlighted that the life insurance industry has seen difficulties in recovering pre-Covid earnings due to the rise in claims and the ongoing pandemic. According to Njegomir and Demko-Rihter (2021), since claims have increased and the pandemic has persisted, it has been difficult for life insurance to regain the profits they had before COVID-19. Investment income dropped precipitously, contributing to a dramatic drop in profits at the outbreak's outset. While profits have not yet recovered to pre-Covid levels, they have increased from recent lows. As a result of a shift in policy obligations and greater investment income, the company's net profit before taxes grew to R9.4 billion in Q3:2021 from R6.0 billion in Q2:2021 (Njegomir & Demko-Rihter 2021). Indicating a shift in policy responsibilities and greater investment income.

2.2.4.3 Direct insurance providers

Buying insurance directly from insurers is a common practice in South Africa. Firms bypass brokers by selling insurance products straight to customers. South African and international direct insurers can establish central offices or operate remotely. According to Hasibuan Sadalia

and Muda (2020), direct insurers reduce costs by eliminating intermediaries and directly engaging with customers, minimising personnel and operational expenses. This cost-saving strategy involves minimising expenses associated with personnel and operational activities. Brophy (2020) states that direct insurers often use highly skilled people who are certified by the Financial Advisory and Intermediary Services (FAIS) Accreditation Body to operate in centralised contact centres. These individuals are accountable for doing outbound sales.

Direct insurers dominate the market for short-term insurance plans in South Africa, selling 60% of all policies (Toby, Akani & Onuoha 2020). According to Okolie (2020), although South African consumers have high expectations of their insurance providers, they may not fully grasp the importance of their monthly premium payments until they encounter a life-altering event for which they are financially prepared due to their insurance coverage.

2.2.4.4 Insurance brokers

As stated by Alsemgeest (2021), in December 2021, the FSCA of South Africa registered 11,623 financial services providers, including insurance brokers and financial advisors. However, not all financial services providers are regulated. Nevertheless, insurance brokers in South Africa are represented by the Insurance Brokers Council of South Africa (IBCO), the nation's national group for insurance brokers (Alsemgeest, 2021).

According to Fei, Wang, and Ma (2023), insurance brokers, like brokerages, often have many nationwide sites to improve client service, as emphasised. Brokers attain success in the life insurance sector by fostering long-lasting relationships with their customers via direct interaction. According to Lanfranchi and Grassi (2022), despite the emergence of digital start-ups, traditional insurance companies continue to prefer the use of insurance brokers to distribute their products to clients. Insurance brokers play a crucial role by serving as mediators between insurance providers and policyholders. They help customers assess their protection needs, budget limitations, and choose solutions that meet their specific requirements. They also oversee the handling of claims administration and help clients with the claim submission procedure. For the South African insurance sector to grow, insurance brokers are crucial. Brokers enhance sales and income for insurance providers by introducing new clients to their goods and services. Additionally, the knowledge and understanding that brokers possess about customer preferences and demands may greatly advantage insurance companies, enabling them to customise their product offers with greater efficiency (Singh, Singh, and Chavan, 2020).

2.2.5 Factors affecting financial performance

This section explores the elements influencing the financial performance of companies under study,

2.2.5.1 Disruptions

Companies can be affected by disruptions, such as pandemics and natural disasters. As an illustrative example, the COVID-19 pandemic caused significant increases in claims for illness, travel and business interruption throughout the pandemic, all of which have impacted on the financial performance of insurance companies under review (Njegomir & Demko-Rihter, 2021). Additionally, the market volatility's consequences occasioned a decline in returns on insurers' investment portfolios they experienced lower reserves and income (Jerry & Robert, 2022). This led insurers to adjust their offerings based on changing customer requirements, offering flexible payment plans. Insurers also faced obstacles in work from home, digitalisation and cyber security brought by the pandemic (Elhassan, 2021).

When evaluating their financial performance, businesses often depend on key performance measures such as return on equity (ROE), return on sales (ROS), return on assets (ROA), and sales growth (Gatuyu & Kinyua, 2020). These metrics provide valuable information on a company's utilisation of resources to create revenue (Zhang, Lu, Morse & Liu, 2022). In addition, as per Gathara, Kilika and Maingi (2019), performance evaluation may be achieved by assessing variables such as profit growth, staff growth, and asset growth. Gatuyu and Kinyua (2020) emphasise the significance of resource acquisition and its use in shaping a company's financial performance and competitive advantage. These statistics measure an organisation's financial strength over a certain period, allowing for comparisons with similar organisations in the industry (Gatuyu & Kinyua, 2020) and providing insights into different industries.

Financial ratios are computed using the accounting data in a company's financial statements. The ratios may be classified into five separate classes (Tone, Kweh, Lu & Ting, 2019):

- Liquidity ratios assess the degree to which cash is easily obtainable to settle obligations.
- Activity ratios assess the efficiency of transforming non-liquid assets into cash.
- Market ratios are used to evaluate investors' responses towards acquiring a company's shares and the consequent fluctuations in stock prices.

- Debt ratios evaluate a company's ability to handle its long-term debt obligations effectively.
- Profitability ratios evaluate how well a business uses resources and manages expenses to generate a return on investment (ROI), focusing on shareholder returns and the connection between returns and share value.

2.2.5.2 Gross domestic product

It appears that the correlation between the country's Gross Domestic Product (GDP) and the financial performance of insurance firms is the most studied topic in the field of finance. The GDP is an essential metric that provides insight into the economic well-being and success of a nation (Bilan *et al*., 2020). Comprehending the intricacies of the insurance industry is also requires an extensive knowledge of the ways in which the financial performance of insurance companies is influenced by the GDP of the country. A significant positive correlation has been observed between the financial performance of these companies and GDP, suggesting that as the economy grows, their revenue tend to improve (Qomariah & Satoto, 2021). The observed correlation can be ascribed to the heightened need for insurance products and services that occurs in tandem with periods of economic expansion. On the contrary, a negative correlation implies that insurance companies' financial well-being may be negatively impacted by economic recessions because of diminished consumer expenditure and difficulties encountered by policyholders. Conducting an analysis of the influence of GDP on the performance of insurers establishes the foundation for investigating the correlation between macroeconomic circumstances and achievement in the insurance sector.

2.2.5.3 Loss ratio

The loss ratio represents the proportion of annual claims an insurance company pays to its received premiums. Insurers choose premium rates by considering the expected loss ratio due to claim payments, administration costs, profit targets, and a suitable risk buffer for unexpected events (Babuna, Yang, Gyilbag, Awudi, Ngmenbelle & Bian, 2023). Entities that participate in high-risk activities are more likely to experience unpredictable fluctuations in their cash flows compared to those the management of which is conservative and risk-avoidant (Naili & Lahrichi, 2022). Insurers who provide coverage for risky operations, like catastrophe coverage, must use effective management practices to reduce the risk of financial losses from underwriting and maximise their returns on invested assets. Leaders in insurance and

reinsurance companies involved in high-risk insurance lines are likely to have more freedom to react to market events compared with managers in less risky entities (Medders & Schwarcz, 2022).

Taking risks is, however, essential to boosting cash flow in the financial operations of insurance companies. Insurance companies may navigate a range of economic circumstances by taking appropriate risks to improve their cash flow dynamics and financial performance. Jumaa's (2020) study showed that the loss ratio and the financial performance of insurance companies in Ethiopia had an insignificant relationship. Nevertheless, insurers and reinsurance companies may experience negative impacts on their annual performance due to high risk-taking. For instance, unforeseen market factors, such as increased competition and a significant decline in stock prices, may restrict management's capacity to raise yearly premiums and investment earnings to offset losses caused by inadequately priced risks. Moreover, annual substantial insurance losses are likely to increase the amount of corporate management expenditures, such as those associated with investigating claims and adjusting losses. According to Le, Shan and Taylor (2023), this could exacerbate a decrease in reported financial performance.

Suryatna (2023) maintains that insurers and reinsurance companies with lower-than-anticipated annual losses are expected to demonstrate superior financial performance. This is due to their avoidance of significant expenses associated with monitoring and handling claims (Adhikari &Kumar, 2023). Ngoc, Tien, and Thu's (2021) study showed that a loss ratio and profitability have a statistically significant negative association. Sasidharan, Ranjith and Prabhuram (2023) determined no substantial evidence of a significant correlation between underwriting risk and profitability among Indian life insurers.

2.2.5.4 Interest rate

To obtain a loan, one must pay interest rates (Affandi, Ja'afar, Ismail, & Shukur, 2021). Insurance companies must adhere to predetermined prices when selling a policy, and any subsequent changes in the market or other reasons cannot modify these rates. Therefore, insurance companies are vulnerable to the risks linked to unpredictable changes in interest rates. Given that insurance businesses spend a significant portion of their funds in premiums, fluctuations in interest rates may profoundly affect their financial stability. Batool and Sahi (2019) assert that insurers are substantially affected by fluctuations in interest rates. The profitability of insurance corporations is affected by a fall in interest rates since it hampers the

increase of their investment income. However, the pandemic worsened insurers' investment returns because of its impact on interest rates.

As a significant part of an insurer's premiums is invested in fixed-income instruments like bonds, income decreases when interest rates are lowered (Bessembinder, Spatt & Venkataraman, 2020). As a result, insurers' investment portfolios and profitability are under pressure. The insurance business, which provides products like savings accounts and annuities, is impacted by wide-scale, low interest rates. When this occurs, insurers must pay policyholders based on the initial fixed interest rates associated with the financial products. Consequently, this reduces revenue and decreases profitability for insurance companies that provide these products.

Endowment plans, which provide a guaranteed return, might see decreased demand due to a current low-interest rate environment. During low interest rates, consumers may exhibit less interest in these products as they pursue higher returns on other investments (Moro-Visconti, Cruz & López Pascual, 2020). In addition, low interest rates impact insurance companies' responsibility to reserve funds for future claims and expenses. Due to the current low interest rates, there is a need to increase these reserves. As a result, the growing liabilities put pressure on the solvency ratios of insurance companies (Legass, 2021).

2.2.5.5 Liquidity

A company’s ability to pay its obligations in full within a year is known as liquidity (Negoro & Wakan, 2022). Companies may make sure they have cash on hand by using techniques like maintaining bank accounts and having cash on hand. This way, they can include these funds as part of their assets. Another option is to use their money through credit or overdraft agreements and invest in short-term deposits. The highest level of liquidity is achieved through holding cash in accounts. To ensure liquidity, a company needs to possess assets that can be easily and quickly converted or sold with transaction costs and value depreciation (Mert, 2020). This demonstrates the company's capacity to fulfil commitments on time and seize business possibilities. In business, liquidity encompasses meeting anticipated and unforeseen requirements, increasing assets, reducing liabilities, or offsetting operational losses. For banks, liquidity refers to their ability to promptly fulfil all responsibilities, including lending, investment activities, deposit withdrawals and meeting liabilities (Dzapasi, 2020).

When it comes to insurance companies' liquidity it refers to their ability to meet obligations to policyholders without relying on profits from underwriting, investments, or selling financial assets (Abdulkareem & Nagvadiya, 2021). According to Mert (2020) to manage claims for insurance companies, they must maintain cash and bank reserves. The COVID-19 pandemic decreased the availability of resources, which interfered with insurers' financial performance in South Africa. These insurers faced challenges in terms of liquidity due to uncertainty, market volatility and disruptions caused by the pandemic. Operational restrictions and financial pressure affected businesses across all sectors (Struwig & Watson, 2023). As a result, policyholders filed claims seeking relief, leading to increased insurance payments. At the time, financial markets experienced volatility that affected the investment portfolios of insurance firms. The decrease in activity and increased risk aversion further impacted investment income, which has historically been a source of revenue for insurers.

2.2.5.6 Leverage

Leverage refers to the proportion of debt to equity, which significantly impacts a company's ROI, level of risk, and overall market value. Considerations like dividend payout risk, capital expenditures, and market perception are affected by a company's debt-to-equity ratio (Ibrahim, Abdulkarim, Muktar, Gurama & Peter, 2021). The interconnectedness between increasing debt utilisation and financial performance was the subject of inconsistent results investigated by Nguyen and Nguyen (2020). A positive correlation between leverage and financial performance was shown by Rahman Saima and Jahan (2020); Jihadi, Vilantika, Hashemi, Arifin, Bachtiar and Sholichah (2021), whereas a negative association was identified by Menacer, Saif-Alyousfi and Ahmad (2020); Susanti, Latifa and Sunarsi (2020).

According to research on financial leverage, businesses should weigh the benefits of debt equity against liquidity costs when making choices (Naomi, 2023). While bringing on excessive debt could lower tax liabilities, the trade-off theory recommends a debt level that maximises return on equity. Nguyen (2022) stated that the COVID-19 pandemic significantly impacted insurance companies' financial performance and debt usage. Therefore, insurers manipulated their leverage ratios to stay solvent and make money in the face of rising volatility, demonstrating the connection between borrowing choices and economic security. Unprepared businesses had more financial hardship during times of uncertainty, but companies with well-managed leverage ratios could weather the storm (Jihadi *et al.,* 2021).

2.2.5.7 Size and age of a company

Extensive studies have been conducted about the interconnectedness of a company's size/age and financial performance within the insurance sector. While there is evidence supporting the link between size and financial performance but still there are notable differences in results (Centobelli, Cerchione & Singh, 2019). In a study that was conducted by Dvouletý, Blažková and Potluka's (2021) revealed that age and size positively and statistically significantly impact people's engagement in firm investment initiatives. Older and bigger firms tend to have higher fixed asset growth.

The size of a company significantly affects its capital structure, with larger firms showing proficiency in managing debt levels due to less volatile profit fluctuations (Terdpaopong & Rickards, 2021). Numerous studies consistently demonstrate a correlation between company size and financial performance, as indicated by ROA (Pattiruhu & Paais, 2020; Jihadi *et al.,* 2021). The company's size positively influences its profitability, which can be attributed to the benefits of risk diversification, economies of scale and overall cost efficiency. In the current study, the researcher measured the magnitude of a company based on its assets.

Insurance companies of greater magnitude often possess more resources, enabling them to diversify their portfolios and exhibit resilience during economic downturns (Vojinović, Milutinović, Sertić & Leković, 2022). The study by Acciarini, Boccardelli and Vitale (2021), found that larger insurance companies in South Africa have shown more resilience in managing the financial challenges arising from the COVID-19 pandemic. They effectively changed their products and services to meet the market's changing needs. The benefits of big corporations surpass the possible disadvantages, such as strict rules and a more complex organisational framework.

According to Andries and Stephan (2019), older companies with the advantage of experience and learning are often less susceptible to the disadvantages of being young and tend to achieve excellent performance. Established companies may use their reputation to generate significant profit margins. Nevertheless, a negative correlation between age and financial success or growth may arise when established practices fail to adapt to evolving market conditions (Jihadi *et al*., 2021). Long-standing insurance companies in South Africa often possess extensive knowledge and a more favourable standing, which assists in acquiring and maintaining consumers during economic difficulties (Makeleni, 2023). Owing to their lack of expertise, smaller companies may own investment portfolios that are less solid and, hence, more

susceptible to financial setbacks, such as the impact of COVID-19. However, well-established enterprises could resist change and face the challenge of rigid legacy systems, whilst emerging competitors tend to possess more adaptability, responding to customer requirements via improved technological infrastructure (Makeleni, 2023).

2.2.5.8 Incurred claims

Policyholders do not appreciate the value of insurance until they experience a covered loss. The processing of a client claim has a significant impact on the overall satisfaction and evaluation of insurance by the client (Pfeffer, Witters, Agrawal & Harter, 2020). Happy clients can create advocates for the program, but unhappy clients are more likely to cancel their cover following a poor claims experience. Therefore, the operation of insurers should be directed at effective provision of services for the goal of retaining a client base as well as ensuring long-term profitability and sustainability (Polinkevych *et al.,* 2021).

As per Selimović, Martinović and Hurko (2020), incurred claims have the most imperative impact on the retention rate of customer satisfaction for insurance companies as well as ensuring their financial prosperity. The existence of claims is necessary for the insurance industry since insurance companies heavily rely on them. Nonetheless, it is important to account for the fact that the non-occurrence of claims has not major impact on the valuation of insurance companies' shares. The profitability of the insurance company is determined by the parameters of different plans and hence the importance of satisfying customers with a claim procedure must be the priority (Kajwang, 2022). Claims and underwriting settlements are a fundamental necessity for the insurance industry as it is used to legitimize companies with their customer relationships. The quicker and more efficient the claims services results not losing clients but instead it attracts more clients and keeps the current ones.

The ratio of claims represents how well an insurance company handles claims in relation to its premiums. If a high claims ratio occurs, this has an adverse impact on profitability more especially in a situation where claims exceed the money collected from premiums (Isayas, 2021). According to the study by Rusconi (2020), the South African Insurance Association (SAIA) have indicated claims ratio in the insurance market fluctuated over time, with values of 70.6% in 2017, 75.6% in 2018, 74.8% in 2019 and 78.8% in 2020. The operational costs of insurers also play a role in profitability, reflected in expense ratios that varied from 33.4% in 2017 to 34.0% in 2018, decreased to 32.6% in 2019, and then rose again to 35.5% in 2020 (SAIA). The financial performance of an insurance organization encompasses considerations.

Hasibuan *et al.*'s (2020) study found a positive relationship between incurred claims ratio and the insurance companies' performance. In addition, other findings from Kęsy (2022), substantiate the impact of COVID-19 pandemic on financial soundness for African insurance firms. The study revealed that there was a large increase on claims in the insurance industry and the rise was driven largely by an increase in claims connected to illness, deaths and economic upheaval from the pandemic.

These uncertainties about the potential severity and longevity of this health crisis caused insurers to increase their reserves. The increase in the claims and reserves as a result of the pandemic has led to a fall in the underwriting profitability for the insurance companies. This was as a result of, the level of payment in claims greater than the premium charged to customers (Omoruyi-Aigbovo & Osamwonyi, 2022).

2.2.6 Sustainability and insurance companies

Sustainability is crucial for the insurance industry's profitability since it inherently fosters fairness and generates favourable financial returns for insurance companies (Gleißner, Günther & Walkshäusl, 2022). Insurance companies can benefit by taking spontaneous steps on environmental challenges, considering both environmental performance and their overall strategy. The potential advantages encompass enhancing the corporate reputation, attracting mindful consumers, attaining favourable investment evaluations, reducing costs through energy preservation, fostering relationships with neighbouring communities, and creating high-value environmentally friendly products (Calza, Sorrentino & Tutore, 2023). According to researchers, taking positive and consistent measures to enhance environmental performance can potentially enhance stakeholder satisfaction and thus improve the competitiveness of companies (Agyabeng-Mensah, Ahenkorah, Afum, Dacosta & Tian 2020). Businesses should strive to reduce pollution, which is a wasteful and inefficient activity. Implementing sustainable product design can enhance businesses' competitive advantage. Companies that excel in investing in environmental preservation enjoy a stronger market position, allowing them to command better prices for their products and boost their company (Hardiyansah, Agustini, & Purnamawati, 2021).

Companies can utilise images to promote and sell their environmentally friendly products, allowing them to tap into new markets and achieve a competitive advantage (Knoppen & Knight, 2022). Simultaneously, organisations embracing a proactive environmental management plan could integrate environmental objectives with the operations of corporate

divisions. Utilising state-of-the-art environmental technology to tackle environmental problems would avoid environmental objections or fines and enhance a company's reputation. The use of this technology would generate market opportunities, bolstering commercial competitiveness. (Rehman Khan & Yu, 2021).

Khan, Sharif, Golpîra and Kumar (2019), emphasise the significance of insurance practices in attaining a sustainable position in the insurance market in South Africa. They prioritise social practices and then place 'environmental practices' as the subsequent focus. According to Parmentola, Petrillo, Tutore and De Felice (2022), sustainable development in the insurance business is strongly connected to transparent information, strategic objectives, commitments, climate change concerns, compliance with standards, and efficient environmental management. The increasing acknowledgement of the importance of sustainability is apparent in how insurance regulators and supervisors are gradually incorporating sustainability principles into their oversight methodologies. It is worth mentioning that both the European Union's European Insurance and Occupational Pensions Authority (EIOPA) and the Prudential Regulation Authority (PRA) of the United Kingdom have issued specific regulations to insurers, requiring them to integrate ESG factors, such as the consequences of climate change, into their Solvency II stress assessments and subsequent reports (Dimitrov, 2020).

Insurance companies started recognising the need for sustainability to achieve both sustainable and profitable growth before the emergence of the COVID-19 pandemic (Di Lorenzo & Sibillo, 2020). They invented tactics to assess and manage their susceptibility to challenges posed by disasters and extreme climate events. Multiple insurance companies were investing cash in renewable energy sources, including wind and solar power, to mitigate environmental harm and lessen the impacts of climate change. According to Marti, Bastida-Vialcanet and Marimon (2024), insurance companies have begun to include ESG issues in their underwriting strategies. This entails evaluating the sustainability performance of the firms for which insurance coverage is provided. Furthermore, insurance companies have been increasing their support for development projects, including housing and green infrastructure, focusing on building more robust and resilient societies. These actions suggest that the insurance industry is more aware of policies that help reduce risks, provide long-term value, and have positive social and environmental impacts (Chiaramonte, Dreassi, Paltrinieri & Piserà, 2020).

2.2.6.1 Environmental sustainability

Levantesi & Piscopo, (2021) argue that the insurance sector plays a major role in maintaining healthy environments and society. By embracing, assessing, and controlling risks, the sector has significant potential to drive future growth (Hickey & Unwin, 2020). Insurance is key as we face growing challenges from COVID-19, natural disasters, climate change and other emerging risks. It provides the security to both the people and companies against disasters, policy changes, currency fluctuations, sicknesses and accidents. A huge amount of money has been spent by insurers in risk management research which has enabled them to gather very vital information that can be used to lower rates for customers (Ajemunigbohun & Ipigansi, 2022). Insurers also serve as regulators for encouraging societal progress by providing communities with goods and services. COVID-19, and the broad impact of pandemics generally, have also underlined just how important it is to integrate forward-thinking risk management for events.

According to Collier and Cox's (2021) research, insurance firms are becoming more aware of the importance of risk to the environment and the possible effects of climate change on their business operations and investments. The pandemic has caused significant disruption and instability, possibly forcing insurance companies to modify their spending and saving habits. Certain insurers may have put their funds towards businesses with long-term prospects, such as renewable energy and green infrastructure. Tortorella *et al.,* (2021) mentioned that due to the pandemic, several organisations and individuals had to transition to remote work, resulting in a favourable effect on environmental sustainability performance due to the widespread sickness. The insurance sector in South Africa was another sector that had this unforeseen occurrence. Reducing travel, energy consumption, and other operational activities led to decreased carbon emissions and improved environmental sustainability performance.

According to Sarkis (2020), ecologically friendly practices can consistently improve society, the environment, and the economy. In a competitive economic environment, sustainable development in a very simple term is where economic growth occurs in a competitive environment that meets the needs of the present without compromising future generations, according to the International Commission on Environment and Development (1987). Ensuring a sustainable system is crucial for meeting both present and future social needs. For companies to thrive in an environmentally responsible way, all groups and people must cultivate an ethic of sustainability (Waheed & Zhang, 2022). According to Sheehy (2022), every country is

worried about sustainability because it is unfair to deprive future generations of their country's resources. Businesses' growing commitment to social responsibility has shifted their emphasis to sustainability. Sustainability entails adopting innovative methods, perspectives, and resources to avoid adverse long-term environmental effects. In today's productive and changing business climate, sustainability can only be achieved by a concerted and exhaustive effort (Sztumski, 2024). The insurance sector is just one of many that understand the need to embed sustainability into their business model to ensure their continued success, considering the growing awareness of the need to achieve sustainable development.

2.2.6.1.1 Leadership

The majority of academic research has determined that a company's capacity to achieve a competitive edge is reliant upon the manner in which its strategic leadership manages its everyday operations (Belas *et al*., 2021). The competitive advantage and general success of businesses are heavily determined by the leaders they choose. The need for capable strategic leaders is a challenge that almost every business faces nowadays. It is thought that strategic leaders could foresee, envisage, sustain, and initiate changes that provide their companies with a competitive edge over their rivals (Willis, 2022). Organizations rely on these leaders to set the tone for the creation of strategic intent and strategic purposes, and to guide the implementation of effective strategic initiatives. These are essential contributions made by strategic leaders, and they help to create and execute plans that provide superior returns.

Leaders in the insurance sector have a substantial influence on environmental conservation via their promotion of sustainable business practices and their role modelling behaviour (Fry and Egel, 2021). Insurance companies may include sustainability into their business goals by integrating environmental considerations. The procedure includes assessing the ecological implications of a corporation and developing strategies to mitigate its adverse consequences. Insurance executives have the ability to set goals in the areas of reducing carbon emissions, promoting renewable energy, and minimising waste (Willis, 2022). In addition, they may establish goals against which their achievements might be assessed. By doing so, they may enhance the prospects of achieving sustained success for their firm, benefiting both their consumers and the wider community.

2.2.6.2 Social responsibility

Sunarto, Widjaja and Oktaviani (2021) point out that insurance companies must ensure that lenders are paid interest and amortisations and understand, prevent, and mitigate policyholders' risks. The financial sector can contribute to sustainable socio-economic development (Fabris, 2020; Samkange, Ramkissoon, Chipumuro, Wanyama & Chawla 2021). Adu Gyamfi, He, Nyame, Boahen and Frempong (2021), assert that insurance firms in South Africa must foster prosperous communities and tackle unemployment, inequality, and poverty, attracting and retaining customers whilst avoiding penalties.

Polinkevych *et al*. (2021) and Zhao (2021) note that insurance companies in South Africa were compelled to reevaluate their commitment to social responsibility due to the pandemic because it boosted the demand for insurance services in South Africa. This social responsibility meant ensuring insurance services by solving digital issues (Lobban, 2021). It also meant insurance companies tackling mental health coverage and healthcare accessibility (Kleintjes, Den Hollander, Pillay & Kramers-Olen, 2021).

For a sustainable society, the insurance industry's contributions to safety, innovation, and economic growth are crucial. Hence, the insurance sector has the capacity to foster growth and stimulate economic advancement. Samkange *et al.,*(2021), assert that insurance firms in South Africa have the obligation of fostering building of prosperous communities and tackling urgent challenges such as unemployment, inequality, and poverty. Through their actions, they may contribute to the establishment of a more sustainable society that brings advantages to their customers, workers, and investors combined. Insurance companies that place a high importance on their social sustainability performance may develop a favourable image that attracts and retains both customers and competent personnel (Adu Gyamfi, He, Nyame, Boahen and Frempong, 2021). Munasinghe (2020) emphasises that insurance companies have the capacity to reduce risks, such as poverty and inequality, which may result in social discontent, political instability, and economic disturbances. Insurance companies must prioritise compliance with social sustainability reporting criteria to avoid penalties or legal issues while showcasing their dedication to this element of the way they operate. The COVID-19 pandemic has had a major effect on insurance firms' social sustainability performance. The significance of sustainability has been intensified, posing obstacles for firms to surmount (Souto, 2020).

Zhao (2021), study reveals that the insurance companies in South Africa have been compelled to reevaluate their commitment to sustainability as a result of the pandemic. Insurance companies have had to adapt their goals according to the evolving needs of their customers and the wider community. The pandemic has significantly boosted the demand for insurance services in SA. This transformation has significantly impacted their efforts to attain social sustainability. This was due to the implementation of lockdowns and social distancing measures; consumers have progressively resorted to channels for obtaining insurance services (Rajnikanth & Doss, 2021).

Consequently, insurance companies have been required to allocate funds for improving their IT infrastructure and implementing digital services such as telemedicine and online claims submission. Lobban (2021), mentioned that while the efforts made during the pandemic have successfully ensured the availability of insurance services, they have also highlighted the issue of restricted access to digital services, exposing a digital divide that has to be addressed urgently. Moreover, the increased focus on health and wellness throughout the pandemic has prompted insurance companies in South Africa to tackle issues like mental health coverage and healthcare accessibility (Kleintjes, Den Hollander, Pillay & Kramers-Olen, 2021). As a result, companies have had to alter their offerings. Health insurance firms prioritise the entire well-being and contentment of consumers by offering services such as telemedicine and mental health therapy. This has ensured that people have access to healthcare during the present pandemic, which has significantly improved society's welfare and contentment.

2.2.7 Relationship between financial and sustainability performance

There is a strong relationship between the financial performance and sustainability of insurance companies, but it should be stated that it is complicated and broad (Gatzert, Reichel & Zitzmann, 2020). Insurance companies have a role in advancing sustainability and mitigating social risks. However, they are profit-oriented businesses that aim to generate money for their shareholders. The crucial role of sustainability performance in the long-term profitability of insurance firms has been increasingly recognised. Alsayegh, Abdul Rahman, and Homayoun (2020), define sustainability performance as the potential of a company to create value over time by effectively managing its social and environmental risks and opportunities. This may include reducing carbon emissions, promoting diversity and inclusion, and ensuring responsible investment practices.

One way a company's achievement in sustainability might affect its performance is by influencing its risk management. Insurance companies that carefully evaluate and reduce their vulnerability to social risks are less prone to litigation or significant harm to their brand image. Investing in assets may improve long-term investment returns and provide protection against climate-related threats (Campiglio, Daumas, Monnin & von Jagow, 2023). Insurers may get advantages by adopting sustainable practices as it mitigates risks and simultaneously generates possibilities. Insurers, for instance, may produce sustained profits by investing in initiatives associated with renewable energy or sustainable infrastructure. This not only benefits growth, but also assists insurers in mitigating climate-related risks, such as extreme weather occurrences or natural catastrophes (Sushchenko, and Schwarze, 2021). Furthermore, Glaveli (2021), reveled that a company's dedication to sustainability may significantly affect customer loyalty and brand perception, ultimately influencing its overall success. An increasing number of customers choose to engage with businesses that prioritise accountability and uphold ethical standards. Insurance firms have the capacity to recruit customers. Retain current ones leading to greater financial performance.

2.3 Theoretical review

The investigation was based on the resource-based theory, the modern portfolio theory, and the stakeholder theory to explain the impact of the COVID-19 pandemic on the financial and sustainability performance of insurance companies in South Africa.

2.3.1 Stakeholder theory

Stakeholder theory presents a different perspective from shareholder value theory by analysing the whole performance of companies in a more comprehensive manner. Chowdhury, Sarasvathy, and Freeman (2024), recognises Edward Freeman as a significant figure within Stakeholder Theory. Freeman's publication, "Strategic Management: A Stakeholder Approach," has great importance in the subject of study it corresponds to. Freeman acknowledges the fact that his theory has been influenced by disciplines such as Strategic Management, Corporate Planning, Organisation Theory, and Corporate Social Responsibility.

According to stakeholder theory, companies should give the needs and demands of many different stakeholders' top priority instead of concentrating only on shareholders when making important choices. The stakeholders include people living in society and the surroundings on a general level. Insurance firms' stakeholders consist of numerous groups: policyholders, staff,

regulators, governments, and the public. Every success of a firm depends on its ability to satisfy the needs of its stakeholders, who have made capital investments in their businesses (Battilana, Obloj, Pache & Sengul, 2022). Dmytriyev, Freeman and Hörisch (2021) advise businesses to give the well-being and requirements of their stakeholders first priority even while they are still making revenue. The stakeholder approach underlines how all relevant stakeholders should be included in the process of developing and supporting objectives (Eweje *et al.,* 2021). Political philosopher Charles Blattberg contends that detractors of stakeholder theory contend it is problematic as it supposes opposing interests might be readily balanced or evaluated (Sani, 2021).

This study examines stakeholder theory, which suggests that companies should focus on all stakeholders rather than only the profit. So, the concept suggests success comes from satisfying all stakeholder's needs and expectations while building trust and loyalty in the process. With regard to the insurance industry, stakeholders argue a clear link should be evidenced here is consistent with stakeholder theory, which states that for corporations to improve it social performance they must critically consider their actions in global communities. Brogi *et al.,* (2022), contend that insurance companies too should be contributing to sustainability by enacting policies calling for eco-friendly choice and investing in local projects with ecological benefits. Using stakeholder theory by insurance companies can facilitate the management of the concerns of stakeholders and enhance long-term financial soundness and environmental sustainability. This research use Stakeholder Theory to examine the responses of insurance firms to the pressures induced by the pandemic. It assesses whether the businesses effectively managed shareholder financial expectations while meeting their commitments to policyholders, many of whom were directly impacted by the crisis. Furthermore, it examines whether insurers upheld their obligations to environmental sustainability, a rising issue for stakeholders including regulators, advocacy organizations, and environmentally aware investors.

2.3.2 Modern portfolio theory

Harry Markowitz in 1952, proposed the Modern portfolio theory (MPT) (Hali, & Yuliati, 2020). The theory underlines the need to locate an investment plan with favorable return and risk characteristics. The method relied on the tenets that investors should seek maximum return at minimum risk and that a portfolio's risk may be spread over many different assets (Petukhina *et al*., 2021). The most common logic is that investors would choose an investment plan that

has the same return but less risk. As a result, only when the potential benefits exceed the risks would an investor consider investing in them (Sukharev, 2020). Markowitz further argued that, due to their low rate of fluctuation, less volatile assets are the ones that any rational investor would want to put their money into. So, it may be concluded that the projected returns on financial assets have a positive correlation with their level of risk (Pratami *et al.,* 2022).

Furthermore, the study, by Budiarso, Hasyim, Soleman, Zam & Pontoh (2020), aimed to understand how the interplay between unsystematic risks affects investment outcomes. Systematic risks affect the whole market, while unsystematic risks pertain exclusively to individual businesses or sectors. According to Cloutier and Mikkelson (2023), reducing risk which is influenced by microeconomic characteristics of each organization can be achieved by maintaining a diverse investment portfolio. However, diversification alone may not be sufficient as risk arises from macroeconomic factors. The study by Cloutier and Mikkelson (2023) indicated that both national and global economic circumstances are significant factors in influencing the risk and return of a portfolio. Considering that insurance companies engage in financial market activities affected by both individualized and systematic risks, this hypothesis is particularly important to our study, since it examines the effect of both risks on the company' financial performance. Hence, it functions as a structure for analysing the influence of macroeconomic issues on investment choices in the insurance industry.

Insurers may use MPT to construct asset portfolios that fulfil their obligations. This portfolio will include a different combination of investments that may be stocks, bonds or any other financial instruments to other kinds with diversify degree of risk. Once insurance company stitch these resources together in the right order and at the right level, an insurance operation is able to manage risk well enough and generate significant profits. With MPT, investors use to design portfolios that will incorporate assets intended to satisfy specific sustainability performance requirements or an environmental and social impact. This is often called a responsible or sustainable investment method. Investors who incorporate sustainability issues into their approach can thus potentially generate financial returns alongside contributing to desirable social and environmental impacts. MPT is relevant to the investigation of sustainability performance within the research. As environmental and social sustainability increasingly permeate investment strategies, insurers must diversify not only in conventional financial indicators but also in accordance with sustainability objectives. This theory was established to comprehend how the integration of environmental and social sustainability into

investment portfolios, in accordance with MPT's principles, influenced the financial and sustainability results of insurance firms during the pandemic.

2.3.3 Resource-based theory

How a company acquires and uses its resources is shown in the “resource-based view” (RBV). Thus, a company’s success will be differentiated based on how well it makes use of its limited resources, how thoroughly it exploits its competitive skills, and how much it invests in capacities that complement its current structures. An organization’s competitive advantage comes from its resources, which can only be a source of superiority if they are valued, unique, inimitable, and non-substitutable (Zimuto and Zvarimwa, 2022). Hence, in order to get an advantage over competitors, a company must invest in and develop its most essential resources. For an organization to succeed, it needs powerful skills. To achieve its full potential, a business must draw on resources that are as uncommon as they are precious. Such resources must be one-of-a-kind; otherwise, they would be readily replicated, sold, and replaced.

The study drew upon the resource-based theory as a theoretical framework to clarify the interconnectedness between a company's age and its financial performance within the insurance industry. According to Lee (2023), this theory posits that as a company matures, it acquires distinct competencies that enable it to capitalise on transient opportunities. Companies with a higher number of senior executives often possess more institutional knowledge and experience, enabling them to effectively oversee scarce, non-renewable, and hard-to-replicate resources. This provides them with a long-lasting competitive edge. A company's long-term success depends on its ability to adapt its operations to changing market conditions (Richey *et al*., 2022). The research used the resource-based approach as a theoretical framework, whereby all variables were seen as potential resources. This enabled the researchers to evaluate the efficiency with which insurance companies use and structure resources such as marketing and product differentiation to facilitate growth. This theory explains why certain insurance firms were more financially robust than others throughout the pandemic, so it is very pertinent to the present research. Although the pandemic certainly disrupted claims, investments, and cash flows, it was quite anticipated that companies with better resources might make use of their capacity to maintain financial stability and react more wisely to the crisis. This study tries to investigate how internal resources of insurance firms affected their financial performance throughout the pandemic.

2.4 Empirical research review

This section discusses the empirical results from existing literature. The content is separated into three parts: existing research on the influence of the COVID-19 pandemic on financial performance and existing research on the effects of the COVID-19 pandemic on environmental and social sustainability performance.

2.4.1 Impact of the COVID-19 pandemic on financial performance.

It was observed there has been a numerous of research done on how the pandemic COVID-19 affects the financial performance of companies. Many studies have investigated aspects of this issue. For instance, Babuna *et al.* (2020), conducted a study, the study focus was to evaluate the impact of the COVID-19 on the insurance sector in Ghana over the timeframe spanning from March to June 2020. The researchers in their study created a technique to evaluate the impact of the pandemic on the insurance business by comparing it to past catastrophes such as Severe Acute Respiratory Syndrome Coronavirus (SARS CoV), Hemagglutinin Type 1 and Neuraminidase Type 1 (H1N1), and Middle East Respiratory Syndrome (MERS). In addition to that the research used a mixed-methods approach, using qualitative and quantitative approach to evaluate the various effects of the COVID-19. Statistics indicate a trend of decreasing profitability along with a rise in insurance claims. The Ghanaian insurance industry incurred losses of around GH ₵112 million because of traveling and event postponements, along with other economic difficulties. As it has been mentioned above the research evaluated the influence of COVID-19 on financial performance in the insurance business in Ghana. With that it is important to note that there are differences between the insurance industries in Ghana and South Africa. This current study will enhance understanding by examining another African nation, South Africa. The present study it main focus is to examine the influence of COVID-19 on sustainability performance of insurance companies.

The findings align with a study conducted by Puawskas (2021), who investigated the impact of COVID 19, on insurance companies. The researcher focused on how COVID-19 has affected insurance companies, based on concerns made by the European Insurance and Occupational Pensions Authority about the sector's viability during the economic instability caused by the pandemic. It is important to also reveal that the study analysed data from 2010 through 2020, focusing on insurance companies in Germany, Italy, Belgium, France, and Poland. The

researcher analysed metrics like return on assets, solvency ratio, Z-score, and outstanding receivables. The results clearly show an adverse impact of COVID-19 on the performance of insurance companies, notably shown in the decreased return on assets for German and Italian enterprises. Additionally, solvency ratios decreased for corporations in Belgium, France, and Germany. The Polish insurance business was unaffected by these impacts, since no influence was seen on Z score ratios in their sample. Their survey also found an increase in receivables for insurers. The research concentrated on European insurers, whereas the present study will examine South African insurance companies. The observation period differs from the previous research; this investigation spans from 2017 to 2022.

Devi, Warasniasih, Masdiantini and Musmini (2020), conducted research with the objective of examining the impact of the COVID-19 pandemic on the financial performance of firms that are publicly traded on the Indonesia Stock Exchange. This study conducted an empirical analysis on 214 companies from nine different sectors and 49 distinct segments. In their study the Wilcoxon Signed Rank Test was used for their analysis. The study found that there was an increase in debt and short-term activity ratios, along with a decrease in liquidity and profitability ratios observed during the COVID-19. Notable fluctuations were seen in profitability and short-term activity ratios before and during the COVID-19 pandemic, although liquidity and leverage ratios exhibited a more stable trend.

Another investigation which was conducted by Sugiharto (2021), this study aimed to evaluate how the COVID-19 pandemic has affected Indonesia's insurance market. An analysis focused on secondary data from the Indonesia Financial Service Authority, specifically examining metrics such as growth rates of total assets, technical reserves, investments, equity, and net premium revenue. The study spanned from April 2019 until March 2021. The investigation utilising sample t-tests revealed different effects of the pandemic on general insurance. There were notable declines in the growth rates of assets, investments, and net premium revenue throughout the pandemic. However, the losses in technical reserves and equity were not statistically significant. The current study aims to investigate not only the insurance financial market, as the previous study, but this one will also evaluate the impact on insurance companies' sustainability performance. Specifically, the study will determine whether or not insurance companies with strong sustainability performance have been impacted by the pandemic, and it will also investigate the outcomes of those companies that have not engaged in sustainability. Therefore, this study will fill the gap that was not addressed by the previous study

Benson, Habanabakize, and Fortune (2020), in their study explored how market volatility both before and after the COVID-19 has influenced the financial performance of businesses listed on the Johannesburg Stock Exchange (JSE). Their study aimed to understand how South African traded companies respond to changes in inflation, growth, exchange rates and share prices by examining these factors. They used panel data from 2010 to 2020. In this research, the Autoregressive Distributed Lag (ARDL) model was used to investigate the long-term effects of macroeconomic factors on company financial performance. The results indicated that asset returns are influenced by economic growth, currency rates, and share prices. Additionally, economic growth and share prices were identified as factors that influence company equity returns over extended periods. This study explores variables by incorporating factors that contribute to the unpredictability of outcomes.

Marimuthu, Mvunabandi, and Maama (2023), undertook research to determine the factors that influencing the financial performance of state-owned companies (SOEs) in South Africa. Their study used a quantitative approach, they analyzed data collected from 33 South African SOEs between 1995 and 2017. Their data analysis involved a multivariate regression model along with the Generalized Method of Moments (GMM) estimation technique. In their results they showed a negative relationship between the capital structure and financial performance. The previous research used just two metrics to assess financial performance, however the present study utilised three metrics, namely ROA, ROE, and Tobin's Q. Finally, their main emphasis was on state-owned businesses rather than insurance firms, and the present research considers the influence of COVID-19 on financial performance.

In a study, Maluleka and Chummun (2024), delved into the function of competitive intelligence, focusing on the insurance industry after the COVID 19 pandemic. Their study primarily focused on examining how insurance companies, those in South Africa were affected by this pandemic. When it comes to analysing data, they were able to quantify the extent of insurance claims and payouts that were related to loss of life during the pandemic. The findings from their study suggest that the South African insurance sector was significantly influenced by the COVID 19 necessitating a reevaluation of pricing, products, and risk management strategies. Interestingly their research also revealed disparities in death benefits and insurance claims across regions indicating gaps in coverage for individuals. The purpose of this study is to fill the gap that has been left by prior research by investigating not only the effect of the pandemic on financial performance but also the impact of the COVID-19 virus on sustainability performance.

Barro *et al*. (2022) looked at how the Great Influenza Pandemic of 1918–1920, like the COVID-19 pandemic, led to a lower GDP, higher consumption, more deaths, lower realised actual returns on stocks, more short-term government bills, a drop-in stock prices, a rise in stock price volatility, a drop in nominal interest rates, and a contraction in actual economic activity. The emphasis of the research was on economic activities, and only a limited amount of attention was paid to how increased mortality rates influence insurance companies' financial and sustainability viability.

2.4.2 Impact of COVID-19 on environmental sustainability performance

The COVID-19 pandemic may have potentially had beneficial effects in terms of sustainability. Patil (2021), one notable benefit is the decrease in greenhouse gas emissions stemming from transportation sources, including air and road travel, leading to a reduction in pollution. The enforcement of lockdown measures and restrictions within the pandemic has concurrently provided relief to tourist attractions such as zoos and animal conservation facilities. Abubakar, Salemcity, Abass and Olajuyin (2021) examined the effects of the COVID-19 pandemic on sustainable management practices. The results suggest that the implementation of limitations on various activities has resulted in a decrease in transit and trade, thereby resulting in a reduction in greenhouse gas emissions. The aforementioned results underscore the substantial impact of the COVID-19 pandemic on conservation efforts.

Similarly to another study done by Lu, Rodenburg, Foti and Pegoraro (2022), aimed to examine the correlation between sustainability and performance by analysing data collected from G7 companies during the period of 2004 to 2020. The aim of their study was to further evaluate the relationship between sustainability approaches and financial performance. The examination conducted by the researchers revealed a noteworthy correlation between sustainability and financial achievement. More precisely, companies that exhibited sustainable practices tended to attain more profits in the long run. This was the conclusion that was drawn from the findings. The study also found that financially successful companies have shown that they have improved their performance in terms of sustainability throughout the course of a variety of periods. According to the findings of the research, businesses that do not implement sustainable practices are frequently confronted with difficulties. It was noticed that in the middle of the COVID 19, businesses who adopted sustainable practices showed signs of stability and endured a less severe fall in their financial performance in comparison to those that made less significant efforts to promote sustainability.

In a study that was carried out by Vásquez Ordóñez, Lassala, Ulrich and Ribeiro-Navarrete (2023), they performed an in-depth investigation into the influence of COVID 19 on the performance of sustainability and the value of company. For this investigation, the researchers utilised previously obtained data from publicly available firm records. In the Eikon database, there was proof to support the hypothesis that certain aspects of the ESG score had a major impact on the success of renewable energy businesses. This conclusion was reached after analysing data from 96 different energy companies. In contrast to previous research, which focused only on the relationship between financial and sustainability performance, the current study investigates how the global crisis represented by COVID 19 affects both of these dimensions. In addition, whereas their research was mostly focused on energy firms, our study primarily focused on insurance companies.

The influence of the COVID 19 on the environmental sustainability policies of firms that are listed on the OMXNasdaq stock market was the subject of study that Andersson and Arvidsson (2023) carried out. To gather information on the environmental policies of these firms, they conducted a poll on two separate occasions throughout the summer of 2021. The data suggest that during the period of economic despair because of the COVD-19, most firms redirected their resources away from an emphasis on sustainability. stating that they also saw that businesses who adhered to the Taskforce on Climate Related Financial Disclosures were less likely to reallocate their resources to projects. This research did not depend on any theories to support its results, and while it covered a wide range of businesses, it did not include the insurance industry.

Ajeigbe and Ganda (2023), conducted research with the objective of examining the impact of the existing pandemic on corporate governance, profits, and sustainability performance within the context of South African listed companies. This study examined data from 42 companies using the fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS) techniques, covering the time frame from 2010 to 2021. The research findings indicated the negative impact of the pandemic on the chosen companies. Significantly, the estimated model was shown to be adversely affected by COVID-19-related costs, debt-to-equity ratios, and staff costs. In contrast, the dependent variables exhibited a strong and statistically significant association with current ratios, net profit margins, and board diversity.

Furthermore their investigation has shown a significant influence of the pandemic on the performance, viability, and sustainability of companies, with a special emphasis on the costs

associated with COVID-19, staff expenditures, and directors' compensation. Moreover, a strong relationship was shown between corporate governance procedures and the success of company sustainability, as indicated by several indicators including return on assets, board size, directors' salary, and board diversity. The aforementioned results emphasise the significant influence of the pandemic on companies listed in South Africa, shedding light on the complex dynamics involved and outlining the many obstacles and prospects for adaptability and enhancement within the business domain.

2.4.3 Impact of COVID-19 on social sustainability performance

Given the present economic and social conditions, it is essential to reconsider public and private strategies, choices, and actions in order to tackle globalised issues that might affect both the freedom of movement and the welfare state (Shi and Moser, 2021). These problems are widespread in developing nations, and there is a method to address them called the 2030 Agenda. This approach requires collaboration, commitment, and diligent behaviour from the many parties involved, who should focus their efforts on achieving a common advantage that addresses the challenges outlined in the sustainable development goals. The business contribution is included within the framework of the corporate social responsibility (CSR) strategy. According to Ahmed *et al*., (2021), certain companies have shown a strong dedication to society by implementing initiatives to reduce the effects of the COVID-19 pandemic.

Al Amosh and Khatib (2023) conducted a study, and the main aim of this actual study was to assess the impact of the COVID-19 pandemic on the worldwide performance of businesses during the 21st century health crisis. The researchers examined the influence of ESG performance on companies and mitigated adverse outcomes. The dataset from nine G20 countries, collected from the Thomson Reuters EIKON database spanning the years 2016 to 2021, was analysed using statistical methods such as statistics, correlation matrix, fixed effect regression, and reliable regression using the GMM model. The data collected from these nine G20 countries provide valuable understanding of the worldwide impact on companies. The primary findings of the research revealed the negative effect of the COVID-19 pandemic on the financial performance of firms. However, it has been seen that companies that exhibit robust ESG performance may mitigate some of these effects. Engaging in ESG initiatives significantly enhanced the resilience of these companies in addressing challenges within the pandemic. According to existing research, corporate chief executive officers (CEOs) might potentially mitigate the impact of crises, such as the COVID-19 pandemic, on their

performance by aligning with stakeholders' expectations and prioritising environmental, social, and governance (ESG) standards.

China has shown notable advancements in environmentally friendly development and corporate social responsibility before even the arrival of the COVID-19 pandemic (Kholaif & Ming, 2023). Despite that the COVID-19 pandemic has had a notable impact on China's advancements in sustainable development (SD) and corporate social responsibility (CSR), reflecting the experiences of other nations, owing to its substantial involvement in the global economy. The research undertaken by Zhang *et al.*, (2022) in China aimed to investigate the effects of the COVID-19 pandemic on companies' attitudes towards sustainable growth and corporate social responsibility. The study was conducted during the last stages of the first COVID-19 outbreak in China, corresponding with the implementation of lockdown measures in some regions of the nation. The results of a review indicated a shift in the focus towards three key dimensions of sustainable development and the characteristics associated with corporate social responsibility (CSR). The findings validate the adverse effects of the COVID-19 pandemic on Chinese companies. The results show that the COVID-19 pandemic had a negative impact on Chinese companies. The results of this study are based on the impact of COVID-19 following the conclusion of the first storm surge. In contrast, the current investigation focuses on the period from 2017 to 2022, including the pre-pandemic, pandemic, and post-pandemic phases.

Researchers from many regions have also worked to investigate the influence of COVID on firms and corporate social responsibility (CSR), using either theoretical analysis or empirical data in their research. Barreiro-Gen, Lozano, and Zafar (2020), proposed three cost-effective and inventive policy methods for developing nations to attain sustainability and development goals in the years following the events of COVID-19, using a theoretical framework. In their study, He and Harris (2020), utilised a theoretical framework to investigate the potential impact of COVID-19 on the evolution of corporate social responsibility (CSR) and marketing. It has been noticed that the COVID-19 pandemic generated a conducive environment for firms to shift towards more authentic and true CSR initiatives, as opposed to participating in shallow gestures or making false promises. Furthermore, they highlighted the potential for businesses to actively contribute towards addressing global social and environmental issues.

The study was conducted by Bose, Shams, Ali and Mihret (2022), the objective of this study was to examine the correlation between the effects of the COVID-19 pandemic and fluctuations

in company valuation. The findings of this research based on data from 4,278 businesses across 47 countries revealed that globally, the COVID-19 pandemic has dramatically reduced the value of organisations. However, it was observed that companies with strong sustainability performance were less affected by the impact of COVID 19 on their value shifts. Additionally, companies operating in nations with a stakeholder- and value-oriented culture also saw less significant COVID-19 impacts on their firm value. The study emphasized the importance of considering business sustainability performance when formulating pandemic corporate regulatory policies and potential economic stimulus measures.

2.5 Research gap

Previous studies that have investigated the meeting point of financial and sustainability performance have shown contradictory results. According to some results of the previous studies, there is a positive relationship between financial and sustainability performance, indicating that businesses that prioritise sustainability also often do better financially. According to this viewpoint, adopting socially and ecologically conscious company practices may boost profits. In contrast, some research suggests that there is no correlation or a negative one between sustainability performance and profitability. This discrepancy, according to Fried (2020), is due to insufficient theoretical grounding, inaccurate concept definitions, and insufficient empirical evidence.

The simultaneous effects of COVID-19 on financial and sustainability performance have not been addressed in any of the prior research. It should be noted that in one study that was conducted in Canada by Lu *et al.* (2021) where they investigate how the COVID-19 pandemic and financial crisis affected the relationship between sustainability and financial performance; they did not include any South African companies in their analysis; they only included G7 companies. There is a lack of analysis of how COVID-19 affects the insurance industry in the current body of literature. While several studies have looked at how COVID-19 affected insurance companies, very few have looked at how the virus affected their financial and sustainability performance. Most of the research has ignored the possibility of an effect on sustainable behaviours in favour of analysing monetary components including premiums, claims, and investment income. As a result, more research is needed to comprehend how COVID-19 affected the sustainability and financial performance of insurance companies in South Africa.

This knowledge vacuum highlights the need to investigate sustainability from several angles, including the social and environmental as well as the financial consequences of the pandemic. This study seeks to address a gap in the literature by investigating the effects of COVID-19 on insurers' financial and sustainability performance at the same time; it will focus on developing nations like South Africa where these issues are becoming more pressing. The results will provide new light on the elements impacting insurance firms' worldwide performance, which is particularly important since no comparable studies have been conducted in South Africa.

2.6 Conceptual framework

The impact of both internal and external factors on financial institutions' performance has been shown by several statistical studies. This study will explore the impact of COVID-19 on the financial performance of insurance using both internal and external factors, such business GDP, loss ratio, leverage, liquidity, size, age, interest rate and incurred claims. Since COVID-19 affected the sustainability performance of insurance companies, this study will look at how the virus affected the social and environmental sustainability pillars

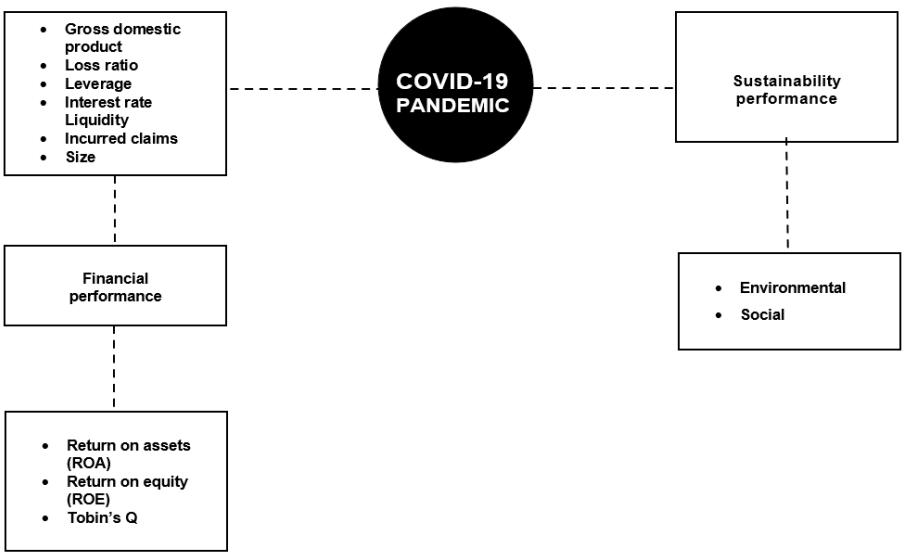

Figure 2.1: Conceptual framework of the study

2.7 Chapter summary

This chapter reviewed the literature, providing insights into the research topic. It began by giving an overview of the insurance sector's global and South African landscape. This

contextualisation set the stage for exploring the impact of the COVID-19 pandemic on the financial and sustainability performance of the industry.

Following this, the chapter explained the theories grounded in the study, providing a foundation for understanding empirical research. Additionally, it examined existing research on financial performance and environmental and social sustainability performance within the insurance sector.

The researcher outlined the gaps identified in past studies, highlighting areas for further investigation. These gaps served as the basis for the study's conceptual framework presented in Figure 2.1, explaining the variables understudy and their relationships. The research design and methodology used to address prior research gaps are described in Chapter 3.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter provides insights into the research design and methodology employed by the researcher to address the research aim, objectives, and questions outlined in Chapter 1. It elaborates on the methods chosen for data collection and analysis, shedding light on the reasoning behind their selection and their relevance to answering the research inquiries. Furthermore, the chapter discusses the choice of population, sampling methods, data collection techniques and the data analysis strategy. Validity, reliability, and ethical considerations are also discussed.

3.2 Research design and methodology

3.2.1 Research design

Although the current study followed a quantitative research design, researchers might follow quantitative, qualitative, or mixed methods research (Strijker, Bosworth, & Bouter, 2020). Qualitative research focuses on the thoughts and emotions of participants (Muzari, Shava & Shonhiwa, 2022). Rooted in the constructive paradigm (Muzari *et al*., 2022), this design often uses audio or video recordings to understand people's experiences. Marketers use qualitative research during product development due to its ability to provide participant-specific information. However, a drawback is that data collection can be time-consuming, and drawing significant conclusions may prove challenging (Khoa, Hung & Hejsalem-Brahmi, 2023).

In contrast, the quantitative method entails gathering and evaluating numerical data to determine correlations and provide solutions to problems (Mohajan, 2020). The main aim of a quantitative study is to extract meaningful insights from a basic dataset. One benefit of the quantitative methodology used in this study is its capacity to provide accurate and useful numerical data that is appropriate to a particular research population. As per Wulff *et al*. (2023), the quantitative method has the drawback of being very generic, and it cannot account for factors that are not included in the model.

A mixed-methods design combines qualitative and quantitative methodologies (Dawadi, Shrestha & Giri, 2021). The researcher may use both approaches at once using this

methodology. The methodology offsets the drawbacks of both the qualitative and quantitative methods, which leads to higher-quality findings. Harrison, Reilly, and Creswell (2020), argue that the mixed method is superior since it incorporates qualitative data to strengthen quantitative findings. The disadvantage of this approach is that the researcher may spend more time than necessary gathering data from participants if the mixed technique is used (Khoa, Hung & Hejsalem-Brahmi, 2023).

3.2.1.1 Needs for quantitative research

As mentioned previously, the quantitative research method relies on numerical data and statistics. Quantitative research aims to measure and evaluate numerical data with existing records, with the goal of making estimates for future periods (Mohajan, 2020). Research in the social sciences that is quantitative in nature involves the systematic empirical investigation of quantitative aspects and problems, along with their relationships. Quantitative research primarily seeks to examine and comprehend occurrences via the development and application of mathematical models, ideas, or hypotheses. Uher (2020), emphasized that measurement is crucial in quantitative research since it establishes a fundamental link between empirical observation and a mathematical illustration of quantitative connections. Quantitative research extensively relies on statistics, making it the most employed branch of mathematics. Economics and business heavily rely on the extensive utilisation of statistical methodologies. Essentially, research conducted utilising the normative technique is referred to be quantitative research since its conclusions are primarily derived on quantitative data (Dawadi, Shrestha and Giri, 2021).

The researcher opted for a quantitative method in this study due to the substantial amount of financial and sustainability data accumulated by insurance firms over time, which is well-suited for quantitative analysis. This technique enables the detection of trends, correlations, and patterns in the financial and sustainability performance of insurance firms during the pandemic by analysing extensive datasets. Quantitative analysis may identify discrepancies in claims and alterations in sustainable practices and legislation enacted in response to the crisis. Qualitative approaches are less effective at processing massive amounts of numerical data, hence these insights will be disregarded.

3.2.1.2 Research paradigm

A research design is grounded in a perspective guiding the methodology, including the selection of the population, the sample, the data collection, and the data analysis (Williams, 2021). This perspective is a lens through which the researcher views the phenomenon under investigation. The study embraced positivism, prioritising empirical evidence and experimental investigations to acquire knowledge (Shrestha, 2021). Positivism emphasises observable facts to generate objective conclusions. By adhering to positivism, the researcher ensured objectivity, minimising biases and subjective interpretations. This paradigm facilitated the systematic collection and analysis of quantitative data, enabling the study to draw transparent and verifiable conclusions based on observable phenomena.

3.2.2 Research methodology

The quantitative research design determined the study's research methodology involving collecting numerical data from existing records for statistical analysis (Mohajan, 2020).

3.2.2.1 Population

A research population comprises individuals sharing characteristics crucial to the subject under investigation from whom a sample of study participants is selected (Newman *et al*., 2021). Lakens (2022), emphasises the need of precisely identifying the target audience when choosing research participants for the sample. This ensures that meaningful information is obtained. The current study population comprises all insurance companies registered with Financial Sector Conduct Authority FSCA, the database of which was updated in 2022 (FSCA, 2023). Therefore, the population consisted of 173 insurers with FSCA licences, 91 of whom had life insurance and 82 offered non-life insurance.

3.2.2.2 Sample

The sample is often a small selection of people chosen from a broader population for research motives. Sampling includes carefully selecting this subset. Choosing an adequate sample size is critical because it reduces sampling errors and increases the relevance of study results to a larger population (Johnson & Khoshgoftaar, 2020). Furthermore, Lakens (2022), emphasises that the sample size selected influences a model's statistical power, which influences the chance of errors. Initially, all one hundred and seventy-three (173) insurance companies registered

with the FSCA were considered for the study based on criteria. To guarantee the sample's relevance and reliability, strict inclusion and exclusion criteria were developed.

The sample had to be adequate for statistical analysis and adhere to inclusion and exclusion criteria.

Inclusion criteria

- ✓ Companies must have been registered with the FSCA for at least six consecutive years 2017 to 2022 to ensure stability and continuity.
- ✓ Companies must have at least five years verifiably documented financial statements for comprehensive study.

Exclusion Criteria

- × Companies not registered with the FSCA for six or more consecutive years were eliminated (79 companies).
- × Companies lacking at least five independently verified financial statements were excluded (57 companies).

The sample size was 37 insurance firms that met the inclusion criteria.

3.2.2.3 Data collection

The investigation employed data obtained from secondary sources, which include information drawn from existing records that researchers consulted. Alexander *et al*., (2020) support the usefulness of secondary data, highlighting its efficacy in offering well-documented information from relevant sources. Mio, Panfilo and Blundo (2020) revealed that secondary data provides higher data quality than the primary data. Moreover, Secondary data often provides a source of data that is both permanent and readily verified by others, making it more available for public verification. As a result, it improves the reliability of the data. The study utilised secondary sources, including institutional records such as annual reports of insurance companies. These reports were obtained from the McGregor BFA database and official websites of the insurance companies. Additionally, previously published data from reliable sources was included to enhance the investigation by including insights from previous research.

The research evaluated the annual reports of 37 insurance firms for a period of six years, from 2017 to 2022. By collecting data from the years 2017 to 2019, the research is able to precisely

evaluate trends and financial stability before the outbreak. It is crucial to include the years 2020 and 2021 since they represent the height of the pandemic's influence, illustrating the rapid and significant disruptions experienced by the insurance industry. Finally, by include data from 2022, was to get valuable information on the early stages of recovery. This allowed the researcher to observe how firms have adjusted and if there have been any lasting changes in their financial performance and sustainable practices. This resulted in a dataset of 222 observations, after dealing with missing data for specific years. When there was a minor amount of missing data in the dataset and imputation was not possible, pairwise deletion was used. This method entailed eliminating records with missing values to preserve the general integrity of the dataset without substantially affecting the results. The measurement of the impact of COVID-19 in South Africa was predicated based on the count of COVID-19 confirmed cases. The mentioned parameter functioned as a pivotal indication of the magnitude and advancement of the pandemic within the nation. The researcher conducted a comprehensive evaluation of the environmental and social sustainability performance by extensively examining the practices reported in the yearly sustainability reports. This evaluation was carried out using the processes and standards of content analysis.

The rating matrix was applied to each of the acquired annual reports to measure the sustainability performance. Barauskaite and Streimikiene (2021) have recognised content analysis as the most relevant technique for assessing the social, environmental, and corporate activities of organisations in their respective studies. Moreover, along with other studies conducted by Rehman *et al.* (2021), Iqbal and Ahmad (2021), and Asiaei *et al*., (2022), the evaluation of sustainability performance was conducted using a Likert scale. Sustainability data were gathered according to each company's degree of active commitment to sustainability, assessed using a 5-point Likert scale:

- 1 = Poor dedication to implementing sustainability practices.
- 2 = A company is involved in specific initiatives, but the impact of these efforts is limited.
- 3 = Dedication to environmental and social efforts is evident. However, these activities need clarity.
- 4 = The company is actively involved in environmental and social activities.
- 5 = The firm demonstrates outstanding social and environmental performance.

3.2.2.4 Data analysis

Data analysis, as defined by Pigott and Polanin (2020), is the methodical assessment and evaluation of data using statistical approaches and logical procedures. The data in this research was examined with the Stata statistical software. Descriptive statistics were used to identify patterns in the data, including measurements such as the mean, standard deviation, maximum, and minimum values. Correlation analysis was used to ascertain the presence of multicollinearity among the variables. Furthermore, the research included both random and fixed effect panel regression methods to examine the impact of identified variables on financial and sustainability performance. Additional explanations of these models are provided in the next section.

3.2.3 Econometric model

An econometric model is a quantitative method used to evaluate the interdependence between variables (Fatmawati, 2022). Econometric models were used to assess the impact of COVID-19 on the financial and sustainability performance of insurance companies. This study used a multiple regression analysis. The regression models were estimated using two techniques of estimation: fixed effect and random effect. The researcher was motivated by previous studies that used econometric models to evaluate financial performance (Heimberger, Huber and Kapeller 2020; Kyere and Ausloos 2021; Ichsan *et al.* 2021; Marimuthu, Mgilane and Maama 2023) to construct the following models on 3.1 and .3.2.

Having introduced and define the model that is used in this r esearch, the next part will now provide the models that were utilised to evaluate the interaction between the variables for each of the objectives of the study

The models described in the following sections comprised the same independent variables, although their dependent variables differed. The following abbreviations represented the independent variables used in each model:

- $COVID\_IMPACT_{it}$ impact of COVID-19 pandemic on firm *i* at time *t*
- GDP_{it} gross domestic product growth for firm *i* at time *t*
- IC_{it} incurred claims due to COVID-19 of firm *i* at time *t*.
- LSR_{it} loss ratio of firm *i* at time *t*
- LEV_{it} leverage of firm *i* at time *t*

- LIQ_{it} liquidity of firm *i* at time *t*
- $Size_{it}$ size of insurance firm of firm *i* at time *t*
- Age_{it} age of insurance firm of firm *i* at time *t*
- $Interest_{it}$ interest rate for firm *i* at time *t*

$\boldsymbol{COVID\_IMPACT_{it}}$**:** This variable was assessed by computing the net fluctuation in the number of infections between 2017 and 2022, considering recoveries within the same period. WHO provided the data for this variable (WHO, 2022).

$\boldsymbol{GDP_{it}}$**:** The GDP growth rate is expected to stimulate the need for insurance offerings among companies and individuals (Le *et al.,* 2023; Zulfiqar, Mohy-Ul-Din, Abu-Rumman, Al-Shraah & Ahmed *et al.,* 2020). GDP is the sum of consumption, investment, government spending, and net exports. The SARB supported this data.

$\boldsymbol{IC_{it}}$**:** The data for this variable were obtained from the financial reports of the insurance firms. The researcher calculated the total amount of claims by adding the claims paid during the experience period to the reserved claim amount set aside at the end of the experience period. The researcher then subtracted the reserved claim amount set aside at the beginning of the experience period (Babuna *et al.,* 2020).

$\boldsymbol{LSR_{it}}$= The loss ratio is often presented as a percentage, offering valuable information on the efficiency and efficacy of an insurance company's underwriting activities. The process of measuring the loss ratio entails gathering data on both incurred losses and collected premiums within a defined time frame, often in the fiscal year. The variable was calculated by summing the claim paid and loss adjusted expense, and then dividing it by the premium earned.

$\boldsymbol{LIQ_{it}}$**:** This variable was determined by dividing current assets by current liabilities to discover whether a company could meet its day-to-day operating demands with the money it has on hand (Obim, Takon & Mgbado 2020). Liquidity in an insurance company suggests that it can pay out claim payments and is financially performing.

$\boldsymbol{LEV_{it}}$**:** This variable was calculated by adding the claims paid and the loss-adjusted expenses incurred by an insurance company, then dividing this sum by the total premium earned. Loss-adjusted expenses are costs incurred by an insurance company in connection with processing and settling claims. These expenses include administrative costs, such as salaries of claims adjusters, legal fees, and investigation expenses.

Once calculated, the ratio is expressed as a percentage to provide insight into how effectively an insurance company manages its underwriting operations. A low ratio indicates that a company efficiently manages its claims and expenses compared to its premium income. A high ratio suggests inefficiency in underwriting practices, indicating high costs compared with premium income (Kariuki, Muturi & Njeru 2021).

$\boldsymbol{Size_{it}}$**:** The study calculated the size of the companies using the natural logarithm of the total value of their assets. Tien, Anh and Ngoc (2020), Reschiwati, Syahdina and Handayani (2020) and Dirman (2020) perceive a significant positive correlation between company size and financial performance. However, other studies disagree because a large size might indicate a high level of leverage (Pattiruhu & Paais, 2020; Tanui & Serebemuom, 2021).

$\boldsymbol{Age_{it}}$: The age of the firms in the research indicates the duration of their operational years. Prior research has shown that well-established companies are more inclined to prioritise sustainability activities, increasing their financial resilience, even during a pandemic. Thus, studies have shown a significant positive correlation between the age of companies and financial/sustainability performance (D'Amato & Falivena 2020; Barauskaite & Streimikiene 2021; Doni & Fiameni 2024).

$\boldsymbol{Interest_{it}}$: The SARB repurchase rate, often known as the repo rate, was used to determine the interest rates in the study. Since insurance companies invest a large portion of their premiums, the profitability of their investment operations is mainly dependent on fluctuations in interest rates. Insurance business profits often suffer when interest rates fall because weaker investment income growth reduces the insurance firm's revenue.

The variables β0 in the models below represent coefficients in a regression model. Each β coefficient represents the change in the dependent variable for a one-unit change in the corresponding independent variable while holding all other independent variables constant. These coefficients indicate the strength and direction of the relationship between the independent and dependent variables. In summary, B0 to β8 are regression coefficients used to model the variation of the dependent variable as a function of the independent variables in a regression analysis.

3.2.3.1 Model 1

The researcher used Model 1 below to assess the impact of COVID-19 on financial performance. The independent variables are fully explained above. The dependent variables in

Model 1 below were ROA, ROE and Tobin's Q, indicating financial performance. These dependent variables are explained after the model.

Model 1

$$ROA_{it} = \beta 0 + \beta 1 COVID\_IMPACT_{it} + \beta 2 GDP_{it} + \beta 3 LOS_{it} + \beta 4 Interest_{it} + \beta 5 LEV_{it} + \beta 6 LIQ_{it} + \beta 7 IC_{it} + \beta 8 Size_{it} + \beta 9 Age_{it} + \varepsilon it \quad (1)$$

$$ROE_{it} = \beta 0 + \beta 1 COVID\_IMPACT_{it} + \beta 2 GDP_{it} + \beta 3 LOS_{it} + \beta 4 Interest_{it} + \beta 5 LEV_{it} + \beta 6 LIQ_{it} + \beta 7 IC_{it} + \beta 8 Size_{it} + \beta 9 Age_{it} + \varepsilon it \quad (2)$$

$$TobinQ_{it} = \beta 0 + \beta 1 COVID\_IMPACT_{it} + \beta 2 GDP_{it} + \beta 3 LOS_{it} + \beta 4 Interest_{it} + \beta 5 LEV_{it} + \beta 6 LIQ_{it} + \beta 7 IC_{it} + \beta 8 Size_{it} + \beta 9 Age_{it} + \varepsilon it \quad (3)$$

ROA_{it}: ROA indicated the return on assets of insurance company (*i*) at time (*t)*. ROA is calculated by dividing a company's net income by its average total assets. A high ROA suggests more efficient use of its assets to generate profit, while a low ROA indicates less efficiency or profitability. Investors and analysts commonly use ROA to evaluate a company's performance and compare it to industry benchmarks. ROA is a reliable measure of a company's profitability, as stated by Alarussi & Gao (2023) and supported by several academics (Markonah, Salim & Franciska, 2020; Shahnia, Purnamasari, Hakim & Endri, 2020; Jonnius & Marsudi, 2021).

ROE_{it}: ROE was the return on equity of insurance company (*i*) at time (*t)*. The ROE compares a company's net income after taxes to its equity capital. A higher ratio reflects the efficiency of using owners' capital. Moreover, ROE measures how well a business uses equity to produce profits. In their analyses of financial success, most academics have relied on this ratio (Shatnawi, Eldaia, Marei & Aaraj, 2021; Rashid, 2021; Saputra, 2022; Wahyuni, Aspan & Mauliza, 2023).

$Tobin's\ Q_{it}$: Tobin's Q_{it} quantifies the firm value ratio of insurance companies (i) at time (*t)*. According to economist James Tobin, Tobin's Q is a quantitative measure that assesses the relationship between a company's market value of total assets and their replacement cost. This statistic provides significant insights into a company's valuation and capital expenditure trends. Geltner, Kumar and Van de Minne (2023) claim that Tobin's Q ratio beyond 1 indicates the potential for further investment, whilst a ratio below 1 suggests a diminished level of

investment. Tobin's Q is calculated by dividing the firm's market value by its assets' aggregate value. This ratio is contingent upon the concepts of market value and replacement value.

3.2.3.2 Model 2

The researcher used Model 2 below to assess the impact of COVID-19 on insurance firms' commitment to environmental sustainability. The independent variables were fully explained above. The dependent variable in Model 2 was $EP_{it,}$ representing the environmental sustainability performance of insurance company (*i*) at time (*t).* This dependent variable is explained after the model.

Model 2

$$EP_{it} = \beta 0 + \beta 1 COVID\_IMPACT_{it} + \beta 2 GDP_{it} + \beta 3 LOS_{it} + \beta 4 Interest_{it} + \beta 5 LEV_{it} + \beta 6 LIQ_{it} + \beta 7 IC_{it} + \beta 8 Size_{it} + \beta 9 Age_{it} + \varepsilon it \quad (4)$$

EP_{it} indicated the environmental sustainability performance of insurance company (*i*) at time (*t).* A firm's environmental sustainability performance depends on considering the amount of energy used, the trash produced, natural resources used, and its effects on ecosystems and habitats (Niyommaneerat, Suwanteep & Chavalparit, 2023). In this research, measurement was performed by using content analysis.

3.2.3.3 Model 3

The researcher used Model 3 below to assess the impact of COVID-19 on insurance firms' commitment to social sustainability. The independent variables were fully explained above. The dependent variable in Model 3 was SRP_{it} which represented the social responsibility performance of insurance company (*i*) at time (*t).* This dependent variable is explained after the model below.

Model 3

$$SRP_{it} = \beta 0 + \beta 1 COVID\_IMPACT_{it} + \beta 2 GDP_{it} + \beta 3 LOS_{it} + \beta 4 Interest_{it} + \beta 5 LEV_{it} + \beta 6 LIQ_{it} + \beta 7 IC_{it} + \beta 8 Size_{it} + \beta 9 Age_{it} + \varepsilon it \quad (5)$$

SRP_{it} stood for a firm's social sustainability performance of firm *i* at time *t.* Islam, Hussain, Ahmed & Sadiq (2021) maintain that social sustainability performance depends on its activities benefiting society.

3.3 Validity and reliability

Validity and reliability refer to the accuracy and consistency of the conclusions derived from a study (Sürücü & Maslakci, 2020). Validity and reliability were ensured as follows:

Comparison with prior research results: The current study outcomes were compared with those of earlier studies. The researcher meticulously compared the results from various studies on financial performance and sustainability to support the results of this study and ensure consistency.

Use of secondary data: The data were derived from audited records, regularly checked and cross-checked for accuracy and consistency.

Instruction on content analysis: The supervisor provided coding guidelines to the student. Throughout the coding process, the supervisor diligently monitored and evaluated the work to verify that the student was progressing in a manner that would guarantee the accuracy and reliability of the data. These steps aimed to make the review of environmental and social sustainability performance more objective and reliable while reducing the effect of human biases.

Hausman's test: Choosing the appropriate model (fixed or random effects) based on Hausman's test enhanced the validity and reliability of the study outcomes. By accurately accounting for the variables and their effects, the researcher ensured that the conclusions were accurate and consistent.

To determine whether a fixed effects model or a random effects model is more appropriate, the researcher has first to do a Hausman test. The alternative hypothesis suggests that a model has a fixed effect, whereas the null hypothesis supports the use of a random effect. When the variables in a statistical model are not random but rather fixed, we conclude by saying that the model has fixed effects. This goes against the principles of the random effect model, according to which model variables should have random traits. The null hypothesis posits that no association exists between the regressors and the error terms in the model.

If the test indicates a probability larger than 0.05 ($p > 0.05$), the null hypothesis should not be rejected, making the random effects model suitable. Conversely, if the probability is less than 0.05 ($p < 0.05$), the null hypothesis should be rejected, indicating that the fixed effects model should be used.

3.4 Ethical considerations

The rules and conventions that regulate behavior are called ethics, and they have a significant impact on the well-being of human beings. According to Brittain *et al.,* (2020), it is a method for determining what constitutes appropriate and inappropriate behaviour in a person. Since all the data used in this study was publicly available and free, no ethical issues emerged from the data gathering. The research made use of secondary data, all of which were already in the public domain, as a result, there was no ethical clearance required. Yet, it is essential to underline that over the course of the study, all of the ethical criteria that have been set by DUT were adhered.

3.5 Chapter summary

This chapter provided detailed insights into the researcher's quantitative research design and methodology to address the research aim, objectives, and questions outlined in Chapter 1. The chapter outlined the sample population, providing a clear rationale for the selection criteria. Detailed descriptions of the sampling methods were included to ensure a representative and unbiased sample. This section emphasized the importance of choosing the right population and sampling techniques to enhance the study's validity and reliability.

The chapter detailed the processes involved in collecting data, ensuring that these processes were aligned with the research aim, objectives and questions. In addition, the chapter outlined the strategy used for data analysis, including the specific statistical methods employed. Moreover, the chapter also explained how the researcher ensured the validity and reliability of the research outcomes. Although the study involved secondary data collection and analysis, the chapter mentioned how research based on primary data would require adherence to ethical principles concerning personal interaction with participants and dealing with sensitive data.

This chapter established a foundation for understanding how the study was conducted, and the following Chapter 4 presents the results of this methodical approach. The chapter will further discuss the findings from the data analysis. By diligently using the selected technique, significant findings have arisen, providing insight into the complexities of the study problem.

CHAPTER FOUR
PRESENTATION AND DISCUSSION OF RESULTS

4.1 Introduction

In this chapter, the researcher presents the statistical research results and discusses them in consideration of the research objectives. The researcher highlights key patterns, offering a thorough interpretation of the data gathered to determine the impact of the COVID-19 pandemic on the financial and sustainability performance of insurance companies in South Africa. This chapter conveys the empirical results, integrates them into the theoretical framework established in earlier chapters, and aligns them with the literature, ensuring an understanding of the study's outcomes.

Firstly, the chapter presents the descriptive statistics, details the multicollinearity test and results, and finally explains the multiple regression analysis and results.

4.2 Descriptive statistics

Table 4.1 below provides descriptive statistics for the dependent and independent variables included in the regression models regarding the financial and sustainability performance of the selected insurance companies. For each variable, the columns show the number of observations (Obs), mean (Mean), standard deviation (Std. Dev.), and minimum (Min) and maximum (Max) values. The rows represent the variables:

Table 4.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA (%)	222	3.13	3.25	-3.44	22.15
ROE (%)	222	13.03	10.26	-9.63	58.57
TobinQ	222	2.02	1.03	0.13	5.80
Social responsibility performance	222	3.13	1.39	0.00	5.00
Environmental sustainability performance	222	2.95	1.35	0.00	5.00
COVID_IMPACT	222	0.33	0.47	0.00	1.00
GDP (%)	222	0.65	3.45	2.34	4.91
LSR (%)	222	34.10	16.57	4.36	78.82
Interest (%)	222	7.63	2.29	3.50	10.25
LEV (%)	222	0.29	0.21	0.03	0.86
LIQ (%)	222	1.13	0.64	0.13	3.14
IC (millions of rands)	222	379.29	1312.48	1574.00	9251.66
Size (millions of rands)	222	2320.70	5256.42	10.537	34807.00
Age (years)	222	47.64	43.48	8.00	177.00

Source: Authors design (2024)

The analysis conducted in Chapter 3 of this research encompasses a total of 37 insurance companies. The study spans a time frame of 6 years, namely from 2017 to 2022. The table above illustrates significant variation in financial and sustainability measures across South African insurance companies, revealing substantial variances in their effectiveness, market perception, sustainability activities, and growth expectations:

ROA: The mean ROA was 3.13%, with an SD of 3.25%. The lowest observed value was -3.44% and the highest was 22.15%. This would mean that insurers (on average) were not managing their assets effectively and hence, generating small profit margins. The fact that minimum value is negative highlight that insurance firms suffered losses, because they did not know how to use their funds efficiently.

ROE: The mean ROE was 13.03%, with an SD of 10.26%. The lowest value was -9.63% and the highest was 58.57%. While the average ROE was positive, the substantial variation indicates that not all companies were equally successful in utilising their equity to generate profits, impacting their financial performance.

Tobin's Q: With a mean of 2.02 and an SD of 1.03, suggesting that the market price exceeded the book value for insurance companies which was associated with positive investors attitude towards these insurers. But the large range suggests that investor sentiment and growth projections were miles apart in the firms. On one hand, some of the companies were thought to be well positioned for future growth, while others less so.

Social sustainability performance: With a mean score of 3.13, the insurance firms participated in very few social sustainability initiatives. This score, however, points out areas that need work to optimize the results of environmental programs.

Environmental sustainability performance: The mean score was 2.95, insurance companies moderately supported environmental sustainability projects, yet less than social sustainability efforts. Similar to social initiatives, those environmental projects were also achieved quite ineffectual.

COVID_IMPACT: This variable had a mean of 0.33, indicating that on average about one-third of observations in dataset captured impact related to COVID-19. In other words, approximately 33% of insurers were impacted by fluctuations in infection rates over the investigated period. Such disruptions might inter alia be a result of consumer demand, economic recession, operational difficulties or other pandemic- related factors. Estimating the

frequency at which COVID-19 strikes and its effect on this variable will assist one assess how terrible insurance firms may be judged to perform on financial sustainability aspects.

GDP (%): The mean was 0.65%, indicating the average economic growth rate during the period under study. However, the data showed significant variability, as evidenced by the standard deviation of 3.45%. This suggests that GDP growth rates varied widely across different periods or regions within the dataset. The highest growth rate recorded was 4.91%, indicating robust economic expansion, while the lowest growth rate was -2.34%, indicating economic contraction.

The variability in GDP growth rates could have impacted the insurance companies in terms of consumer spending, investment activities, and financial performance. To maintain financial stability and sustainability, the firms would have had to adapt their strategies and risk management practices in response to fluctuations in economic growth.

LSR: The average was 34.10%, with an SD of 16.57%, indicating variability in companies' ability to manage and mitigate losses incurred from claims. A high LSR would have suggested that a large portion of the premiums collected by insurers was utilised to cover claim payouts and related expenses, impacting profitability. The broad SD emphasised disparity in loss management strategies and efficiency across the industry, with some companies demonstrating more effective loss control measures than others. Variations in the LSR may reflect differences in underwriting practices, risk management protocols, or market conditions, which can influence insurers' financial performance and stability.

Interest (%): Interest rates, on average, stood at 7.63%. This statistic represents the prevailing rate at which insurers could borrow capital or earn investment returns, reflecting economic conditions and the monetary policy environment. Fluctuations in interest rates can significantly impact insurers' investment income and borrowing costs for maintaining liquidity or funding operational expenses. While the average interest rate provides a benchmark for financial planning and decision-making, insurers must also consider inflation, market volatility, and regulatory requirements when managing investment portfolios and debt obligations.

LEV: The mean leverage ratio was 0.29, with an SD of 0.21. A mean below 1 indicates that, on average, underwriters had more assets than liabilities, allowing them to meet financial obligations by liquidating assets if necessary. In addition, these statistics indicate that companies relied more on their assets than on external borrowing to finance their operations.

A leverage ratio below 1 is considered favorable as it suggests a lower level of financial risk and potential vulnerability to financial distress.

The standard deviation of 0.21 indicates the degree of variability in leverage ratios among the insurance companies. While the average leverage ratio provides an overall assessment, the standard deviation reveals significant differences in leverage levels across the firms. Some companies might have had higher leverage ratios, indicating more significant reliance on debt financing, while others had lower ratios, suggesting a more conservative financial structure.

LIQ: The average liquidity ratio was 1.13. This suggests that, on average, insurance companies maintained a relatively moderate level of liquidity during the period under study. The standard deviation of 0.64 indicates the degree of variability in liquidity ratios among the companies in the sample.

A liquidity ratio of 1.13 indicates that, on average, companies had slightly more current assets than current liabilities, which is generally considered favourable. However, the range between the maximum and minimum liquidity ratios (3.14 and 0.13, respectively) suggests that some companies had substantially higher liquidity levels while others had lower ones. This variability could have impacted companies' ability to meet short-term financial obligations and manage.

IC: This variable, measured in millions of rands, averaged 379.29 with an SD 1312.48, indicating variability in investment income and strategies, asset allocations, and market exposures. The presence of a significant standard deviation indicates that there is a considerable amount of variation in the claims made by various insurance firms. Certain organisations may have seen exceptionally elevated claims, maybe attributable to the diverse ramifications of COVID-19 on their particular customer base or areas of operation. The extensive array of claims incurred demonstrates the unequal financial strain caused by the pandemic across the industry, indicating varying degrees of risk exposure and probably various levels of readiness and response approaches among insurers

Size: The mean size of the insurance companies was calculated to be 2320.70 million rands, indicating a substantial financial scale. However, the SD of 5256.42 suggested diversity in company sizes within the sample. The range between the minimum and maximum sizes illustrates this disparity, with the smallest company valued at 10.537 million rands and the largest at 34,807 million rands. This variance implies diverse operating capacities and market influences among the companies. Larger firms may have leveraged economies of scale to

achieve cost efficiencies and dominate market shares due to their greater resources and market presence. Conversely, smaller companies might have carved out niches or specialised in market segments to remain competitive.

Age: The average age of the insurance companies in the sample was 47.64 years, indicating a long-standing presence in the industry. However, the SD of 43.48 years signified diversity in the ages of the companies. The range of ages, from 8 to 177 years, further underscores this diversity and suggests varying levels of industry experience and institutional history among the firms. With their extensive tenure in the market, older companies may have had to uphold sustainability practices to maintain their reputation and standing within the community.

4.3 Multicollinearity test

In multiple regression analysis, "multicollinearity" means that many independent variables have linear connections (Shrestha, 2020). When there are multiple variables in the regression model that are highly linked with each other, it is called multicollinearity However, because multicollinearity can lead to inaccurate research results, the researcher performed a multicollinearity test, shown in Table 4.2 below.

Table 4.2 Multicollinearity test

	COVID-IMPACT	GDP	LOS	Interest	LEV	LIQ	IC	Size	Age	VIF
COVID-IMPACT	1.00									2.83
GDP	-0.28***	1.00								6.67
LSR	0.39***	0.03	1.00							3.19
Interest	-0.69***	0.68***	-0.21***	1.00						2.03
LEV	-0.19***	0.09	-0.02	0.19***	1.00					4.92
LIQ	-0.23***	0.03	-0.24***	0.23***	-0.11	1.00				3.49
IC	0.03	0.01	-0.11	-0.03	-0.04	0.06	1.00			5.24
Size	0.04	0.01	-0.09	-0.04	-0.15**	-0.00	0.73***	1.00		4.92
Age	0.02	0.01	0.09	-0.02	-0.17**	0.33***	-0.00	0.04	1.00	6.13

Note: *** = significance at 0.01; ** = significance at 0.05; * = significance at 0.1

Multicollinearity arises when there is a strong level of correlation between explanatory factors. When the correlation coefficient surpasses 0.8, it might cause issues with multicollinearity, which in turn affects the accuracy of estimates and the reliability of results (Singh and Kumar 2021). Table 4.2 displays the findings of the multicollinearity examination. All variables in the study had a correlation value below 0.8, indicating the absence of multicollinearity. One often used measure for assessing the presence of multicollinearity is the Variance Inflation Factor (VIF). A Variance Inflation Factor (VIF) score over 10 indicates an alarming level of multicollinearity (Shrestha, 2020). Upon analysing the data provided in the table, it is evident that all the variables possess VIF values that are below the specified threshold of 10. Gokmen, Dagalp and Kilickaplan (2022), mentioned that multicollinearity is absent if the VIF value is less than 10. These findings shown in Table 4.2 indicate that there is no presence of multicollinearity among the variables, since all of them have values below 10.

4.4 Multiple regression analysis and results

The researcher used multiple regression analysis, employing fixed and random effects, to determine the factors influencing the selected insurance companies' financial and sustainability performance before, during, and after the COVID-19 pandemic in South Africa.

A hausman test with a probability greater than 0.05 ($p > 0.05$) suggests that we cannot reject the null hypothesis. Basically, the null hypothesis states that the error term of the entities, which remains constant over time, does not have any correlation with the regressors. In this scenario, the null hypothesis proposes that a random effect model is more favourable. The null hypothesis serves as a foundational assumption or first proposition that we want to examine. However, if the probability of the Hausman test is below 0.05 ($p < 0.05$), we reject the null hypothesis and opt for a fixed effect model.

Multiple regression results

The sections below present the multiple regression results showing the relationships between the independent and dependent variables and their significance levels. For every conclusion, the researcher will additionally go over the implications of the results and provide relevant evidence that supports or disputes the findings, therefore clarifying the identified trends.

4.4.1 Impact of the COVID-19 pandemic on financial performance

The first research objective was to assess the impact of the COVID-19 pandemic on the financial performance of insurance firms in South Africa. The tables below 4.3, 4.4 and 4.5 present the results of this analysis, focusing on the relationship between the pandemic and ROA, ROE and rTobin's Q, key measures of financial performance.

The tables collectively analyse how the COVID-19 pandemic affected the financial performance of insurance firms in South Africa. The results highlight the challenges faced by the insurance sector and their resilience during the pandemic.

4.4.1.1 Impact of the COVID-19 pandemic on ROA

Table 4.3 below provides the multiple regression results showing the relationships between the independent and dependent variables and their significance levels. The table provides information on model fit statistics, including R-squared (R2) and adjusted R-squared values, F-statistics, and probabilities of F-statistics. These statistics assess the regression models' overall goodness of fit and significance. Additionally, the table displays the probability of the Hausman test, which evaluates the appropriateness of selecting between the fixed and random effect models whereby the measure of return on assets was used to assess financial performance.

Table 4.3: Impact of the COVID-19 pandemic on ROA

	Random effects model			**Fixed effects model**		
ROA	**Coef.**	**T-stats**	**P-value**	**Coef.**	**T-stats**	**P-value**
COVID-IMPACT	2.642	14.31	0.000	1.04	2.62	0.009
GDP	-0.289	-4.92	0.000	-0.12	-1.70	0.091
LSR	-0.027	-2.97	0.003	-0.04	-2.91	0.004
Interest	0.85	8.37	0.000	0.39	2.86	0.004
LEV	-0.12	-5.45	0.000	-0.03	-0.71	0.478
LIQ	0.79	3.12	0.002	0.21	0.68	0.497
IC	0.64	2.96	0.003	-2.49	-2.52	0.012
Size	-0.25	-1.05	0.292	1.24	0.80	0.424
Age	-0.00	-0.39	0.698	-0.133	-1.09	0.275
Constant	-5.72	-4.02	0.000	7.03	1.43	10.153
R^2	0.781			0.728		
Adjusted R^2	0.787			0.741		

F-Stats	137.93			118.75		
Prob. of F-stats	0.000			0.000		
Prob. of Hausman test	0.103			0.103		

Source: Authors design (2024)

The results presented in Table 4.3 above provided insights regarding the relationship between various factors and the ROA of South African insurance companies during the COVID-19 pandemic. Based on the findings shown in Table 4.3, it can be concluded that the p-value associated with the Hausman test fails to show statistical significance (p=0.103). The null hypothesis is not rejected based on the findings of the investigation. Consequently, the decision is given to use the random effects model for the purpose of estimating the model.

Regarding the impact of COVID-19 on ROA, the analysis demonstrated a positive and significant influence, with a coefficient of 2.642 and a p-value of 0.000. The findings suggest that as the pandemic progressed, people and corporations gained greater awareness of the importance of insurance in reducing health-related risks. The increased awareness led to an increase in demand for insurance products, like as health and life insurance, as individuals and businesses sought safeguards against potential risks caused by the virus. The surge in demand for insurance coverage is likely to have resulted in rising pricing and a broadened customer base for insurance companies. The Return on Assets has been positively impacted by the expansion of revenue and investment strategies used throughout the pandemic. These results are consistent with the studies conducted by Ichsan *et al*., (2021) and Devi *et al*., (2020) they found a positive correlation between these parameters. However, they diverge from the results shown by Periokaitė and Dobrovolskienė (2021) and Gazi *et al*., (2022) where they found negative correlation between the two variables ROA and COVID-19.

Conversely, there was a significant negative correlation between ROA and GDP (-0.289, p-value = 0.000). Basically, this implies that when South Africa's GDP goes up, insurance companies' return on assets goes down, and when it goes down, the opposite happens. This negative correlation means that during times of economic growth, people and organisations may choose to spend more on other options instead of buying insurance products. This may result in insurance firms seeing a decrease in the return they get on their assets. On the other hand, during periods of economic decline, people may give more importance to protecting their possessions by purchasing insurance,

which might possibly increase the profitability of insurance companies. Katusiime (2021) produced parallel findings, whereas Kartikasary *et al.,* (2020) also observed a substantial adverse relationship between GDP and ROA, aligning with the outcomes of the present study.

Additional information about the correlation between the loss ratio and return on assets may be found in Table 4.3. The results of this research demonstrate a significant and negative correlation between the Loss ratio and ROA, as shown by the coefficient of -0.027 (p-value = 0.003). These findings correspond with Ichsan *et al.* (2021), who identified a negative correlation between loss ratio and ROA. The negative correlation is linked to the economic consequences stemming from the pandemic. The occurrence of economic downturns has resulted in financial difficulties for both businesses and people, so affecting their capacity to fulfil their obligations in terms of paying insurance premiums. In these circumstances, insurance companies have encountered a rise in claim occurrences accompanied by a decline in revenue from premiums, resulting in an elevated loss ratio. The resultant financial burden had an impact on the overall return on assets, as insurance companies grappled with the difficulties of sustaining profitability amidst rising claims and economic concerns.

The correlation between the interest rate with ROA is both positive and statistically significant. This is shown by the presence of an interest rate coefficient of 0.85 and a p-value of 0.000 in Table 4.3. The data indicate that insurance companies get higher investment returns when interest rates rise. This result is consistent with the findings of Kantakji, Hamid, and Alhabshi (2020), which indicated a robust link between the interest rate and return on assets. Based on this information, it is possible that the South African insurance firms' financial performance may have been positively impacted by increased interest rates during the COVID-19 pandemic. The COVID-19 pandemic may have impacted the economy, thereby accounting for the positive correlation between interest rates and return on assets. During periods of economic uncertainty, central banks use elevated interest rates as a means of implementing monetary policy to maintain stability in financial markets and mitigate the impact of economic challenges. This intelligent preference might provide insurance firms with opportunities to achieve greater returns on their investments, hence benefiting their return on assets. From the standpoint of stakeholder theory, which serves as the foundation of this research, these results may be understood in terms of the interests and interactions among various stakeholders. Rising interest rates may be beneficial for insurance companies, as well as

its stakeholders, such as shareholders and policyholders. Shareholders may anticipate enhanced income on their investments, while policyholders might expect heightened stability in the insurance business due to better financial performance.

The results further indicate a significant and negative association (Coefficient = -0.12, p-value = 0.000) between the LEV of insurance companies and their ROA. The negative correlation suggests that increased levels of leverage are not favourable to optimising ROA. This signifies that when COVID-19 broke out, there was more financial uncertainty and unpredictability in the insurance companies. The observed negative relationship between LEV and ROA can be linked to how challenging it was for insurers to manage their debt when the pandemic disrupted the economy. When the pandemic started, it revealed weaknesses that no one saw coming. For instance, there were a lot more insurance claims and changes to the investment environment, which made highly leveraged situations less appealing. These findings align with the results reported in the research done by (Rahman, Saima, and Jahan, 2020).

Moreover, Table 4.3 demonstrates a favourable and statistically significant correlation between liquidity and return on assets, in addition to the evidence already presented. The relationship is shown by the coefficient of 0.79 and a statistically significant p value of 0.002. The presence of this association indicates that higher levels of liquidity are associated with profitability in terms of return on assets. Prior research (Effiong and Ejabu 2020; Dimitrova 2020; Alhassan and Islam 2021) in the insurance industry has consistently shown that the word "liquidity" refers to the ability of an insurance company to promptly meet its financial obligations. The existence of this positive association suggests that insurance companies with sufficient liquidity are in a better position to generate profits from their assets. Put simply, more liquidity often suggests that an insurance company has a larger amount of readily available cash that may be strategically invested or used to take advantage of favourable opportunities. Consequently, this might result in an enhancement of the Return on Assets when the corporation optimises its financial resources.

Furthermore, improved liquidity may offer protection against unexpected changes in the market, allowing insurance companies to better handle economic downturns with increased strength. This supports the resource-based theory that was discussed in chapter two, specifically in the section on theoretical review. According to the resources that are currently available theory suggests that a company's unique and valuable resources give it an edge over its competitors and help it perform

better. In this situation, having enough money available is considered very important for insurance companies. It allows them to react to changes in the market, take advantage of business opportunities, and deal with economic uncertainty. To stay ahead of the competition, it is important to strategically manage resources. The findings of this study are consistent with the research conducted by Dahiyat, Weshah, and Aldahiyat (2021), as well as Reschiwati, Syahdina, and Handayani (2020). These studies also discovered a positive correlation between LIQ and ROA.

Insurers enhance their financial performance, as assessed by ROA, and strengthen their ability to manage risks by maintaining assets that may be readily used to meet requirements. This technique aligns with the principles of Modern Portfolio Theory. In the context of the uncertainties and disruptions produced by COVID-19, the link between LIQ and ROA becomes more significance. Insurance companies have seen increased claims, market instability, and related concerns, which makes it beneficial for them to maintain adequate financial reserves. Insurance firms rely on LIQ to effectively manage their obligations, take advantage of investment opportunities, and navigate uncertain economic conditions. Efficient liquidity management is crucial for protecting insurance firms from adversity and improving their financial performance, especially during challenging periods like as the COVID-19 pandemic.

Results demonstrate a significant and positive association between IC and ROA with a p-value of 0.003 and a coefficient of 0.64. The findings indicate a positive correlation between the increase in the number of claims submitted and the corresponding rise in the ROA for insurance firms, and vice versa. During the COVID-19 pandemic, an increase in insurance claims had a positive impact on the financial performance of South African insurance firms, as measured by their ROA. These observations may have two implications. IC during the pandemic may indicate a greater demand for insurance, perhaps resulting in higher premiums and therefore higher returns on assets. Alternatively, this might indicate that insurance firms have implemented effective risk management and claims processing strategies to address the distinct challenges arising from the current global health crisis. Isayas (2021), found similar results, showing a positive correlation between incurred claims and ROA.

The research indicates an adverse relationship between the size of insurance companies and ROA; however, this correlation lacks statistical significance. The findings indicate that the expansion of

the firms analysed in this research does not significantly affect the ROA. While previous research by Benlagha and Hemrit (2023) indicates that insurers often get advantages from their size via portfolio diversification, the findings of this study provide an alternative viewpoint. The results indicate that this idea is inapplicable to the South African insurance firms examined non this study.

The results show a negative and insignificant correlation between ROA and age, as shown by a coefficient of -0.00, a T-statistic of -0.39, and a p-value of 0.698. The negative coefficient indicates an inverse association, signifying that as the age of the firms grows, their ROA somewhat declines. This result aligns with the findings of AL-Mutairi *et al.* (2021) and Hamal (2020), who also identified a negative and insignificant correlation between ROA and Age. Nonetheless, this impact is negligible and statistically inconsequential for deriving any substantive conclusions, as shown by the high p-value. The age of an insurance firm likely did not provide a significant benefit or disadvantage in sustaining or enhancing operational efficiency, as shown by ROA. It is most likely that insurance companies relied more on the speed and efficacy with which companies reacted to the disruptions caused by the pandemic, including the increase in claims, fluctuations in investment returns, and operational modifications. One may understand the discovered outcomes by means of resource-based theory. The theory holds that a company's internal resources such as operational efficiency, financial stability, and adaptive capacity define its ongoing competitive advantage. The findings indicate that, irrespective of age, insurance businesses were required to swiftly modify their operations and strategies during COVID-19 to sustain asset efficiency, rendering company age an inconsequential feature in this particular financial performance metric.

The R^2 result for the random effects model is 0.781, indicating that almost 78.1% of the variation in ROA is elucidated by the factors used in the model. The elevated R^2 indicates that the random effects model effectively fits the data, signifying that the independent variables explain a substantial amount of the variations in ROA across the examined time.

4.4.1.2 Impact of the COVID-19 pandemic on ROE

Table 4.4 below presents the results on the relationship between the pandemic and the financial performance metric of ROE. The table exhibits the coefficients, t-statistics, and p-values for the random and fixed effects models. Independent variables were included as control variables in the

analysis. Moreover, the table furnishes details regarding model fit statistics, such as R-squared (R2) and adjusted R-squared values, F-statistics, and probabilities of F-statistics.

These metrics evaluate the overall goodness of fit and significance of the regression models utilised in the analysis. Additionally, the table presents Hausman's test results. A consideration of the p-value (0.074) that was generated from the Hausman test was used to carry out the interpretation of the outcomes that were received from the random effect model.

Table 4.4: Impact of the COVID-19 pandemic on ROE

	Random effects model			**Fixed effects model**		
	Coef.	t-stats	p-value	Coef.	T-stats	P-value
COVID-IMPACT	-0.15	-3.11	0.008	-2.00	-1.00	0.319
GDP	-0.59	-3.23	0.001	0.08	0.24	0.809
LSR	-0.07	-2.11	0.035	-0.02	-0.42	0.676
Interest	1.28	3.90	0.000	-0.03	-0.05	0.961
LEV	0.04	0.46	0.648	-4.76	-0.85	0.398
LIQ	2.15	2.30	0.021	0.72	0.05	0.618
IC	1.89	1.91	0.056	-4.20	-0.87	0.383
Size	-0.46	-0.42	0.674	5.36	0.75	0.454
Age	-0.02	-1.06	0.289	-1.76	-3.10	0.002
Constant	-1.92	-0.34	0.736	91.00	2.09	0.038
R2	0.718			0.812		
Adjusted R2	0.753			0.849		
F-stats	92.91			104.62		
Prob. of F-stats	0.000			0.000		
Prob. of Hausman test	0.074			0.074		

Source: Authors design (2024)

Table 4.4 above shows a statistically significant negative relationship between the COVID-19 pandemic and insurance firms' ROE. With a correlation coefficient of -0.15 and a p-value of 0.008. This suggested that the pandemic has likely resulted in significant economic volatility, leading to a transformation in the financial environment and impacting both businesses and people. In periods of uncertainty, consumers may experience heightened financial strain, leading to reduced spending

and less engagement in insurance-related endeavours. Due to reduced economic activity, insurance companies may see a decline in profitability and investment returns. This observation aligns with the results documented by Hinton (2020). Simultaneously, these results contradict the conclusions of Hawaldar *et al.,* (2022) where the researchers identified a direct relationship between COVID-19 and ROE. The outcome illustrates that the worldwide health crisis has substantial consequences for insurance firms, namely regarding their operations and policies.

The analysis revealed a significant negative correlation between ROE and GDP, as indicated by a coefficient of -0.59 and a p-value of 0.001. This indicated that in the insurance sector, a decrease in the Gross Domestic Product often leads to a rise in the ROE for insurance companies, and vice versa. This finding has great importance for insurance companies during the course of the pandemic. During economic downturns, there is an increased possibility of greater awareness and demand for certain insurance products, such as health or unemployment insurance. Insurance companies that effectively address these evolving needs may attain a stable or improved return on equity, notwithstanding the economic challenges associated with a declining GDP. The findings presented are consistent with the study done by Ardyansyah (2021), which demonstrated a negative correlation between GDP and ROE.

The variable LSR' shows a coefficient of -0.07, a t-statistic of -2.11, and a p-value of 0.035. This finding indicates that there is an inverse correlation between the LSR and the ROE, meaning that as the LSR grows, the ROE tends to drop, and vice versa. A negative correlation exists between loss ratio and return on equity, implying that a higher LSR indicates that a greater proportion of premiums is allocated towards covering claims and operating expenditures, resulting in a reduced amount available for shareholder returns. Insurance companies facing an elevated LSR because of claims connected to the pandemic may have seen a decrease in their ROE. The global health crisis may have affected the underwriting process, risk assessment, and overall financial performance of insurance companies due to the uncertainty and instability it created. Multiple studies have also shown an adverse correlation between the LSR and ROE (Dao, 2020; Nyabaga and Wepukhulu, 2020 and Twum, Agyemang and Sare, 2022).

A coefficient of 1.28 and a p-value of 0.000 revealed a positive and statistically significant correlation between the interest rate and ROE. This implies insurance companies see a favourable effect on their ROE when interest rates increase. It is crucial to emphasise that this positive

correlation might be attributed to the central bank's reaction to the economic challenges caused by the pandemic, which may have positively impacted the investment earnings of insurance firms.

Despite a positive correlation between LEV and ROE, the relationship lacked statistical significance, as indicated by a coefficient of 0.04 and a p-value of 0.648. This implies that the amount of debt undertaken by insurance companies does not have any influence on their profitability, as assessed using the metric of ROE. This suggests that insurance companies may sustain a certain degree of leverage without seeing substantial changes in their returns. This discovery has ramifications for insurance companies within the COVID-19 pandemic. Efficiently handling leverage becomes essential for insurers in times of emergencies such as the one triggered by the pandemic. The lack of a link between LEV and ROE suggests that changes in debt levels may not be the main factor influencing swings in profitability, considering the challenges posed by the COVID-19 pandemic. This aligns with the research conducted by Khati (2020); Paul, Bhowmik, and Famanna (2021), and Ahamed (2021), who found similar results. However, Dang (2020) and Sundas and Butt (2021), reported contrasting findings, indicating a negative relationship between the two factors.

A positive and statistically significant association between LIQ and ROE, with a coefficient of 2.15 and a p-value of 0.021. This finding suggests that insurance companies that maintain high levels of liquidity are more inclined to achieve a positive ROE. The presence of easily accessible cash or convertible assets positively affects the profitability of insurance firms. Given the substantial impact of the COVID-19 pandemic, this result becomes more significance. In the context of the pandemic-induced disruptions, it is essential for insurers to maintain their LIQ positions in order to effectively navigate uncertainties and ensure sustained financial performance and resilience in the face of unforeseen challenges. This argument is consistent with the principles articulated in the Resource Based Theory. According to the RBV, businesses with strategic resources have the potential to attain sustained competitive advantages and exceptional performance. Within the context of this research, liquidity might be seen as a valuable resource for insurance entities. The ability to maintain adequate levels of LIQ entails the possession of easily accessible resources that may be strategically used.

Despite a positive correlation between IC and ROE, the relationship lacked statistical significance. The coefficient of 1.89 and a p-value of 0.056. It is notable that the correlation between IC by

insurance-incurred and ROE is positive but lacks statistical significance. This implies that although there is a link between IC and ROE, the influence may not be substantial enough to be regarded relevant. The significance of these findings can be realised within the context of the wider economic environment, particularly in considering the continuing ramifications of the COVID-19 pandemic. The positive correlation indicates that when the number of insurance claims paid by the company increases, there is a likelihood for the ROE to similarly increase. Nevertheless, the absence of statistical significance suggests that additional elements or external variables, such as the unique difficulties presented by the pandemic, could be impacting this correlation.

The coefficient for size is -0.46, and the p-value for it is 0.674; this indicates that there is no statistically significant link between size and ROE. This would imply that the size of an insurance company, as determined by the natural logarithm of total assets, does not have a substantial impact on the ROE of the insurance company. It is possible that the effects of COVID-19 did not alter the correlation between the size of a company and its ROE. The results of this study are consistent with the findings of Sudrajat and Setiyawati (2021), who Discovered a negative correlation between the size of a company and its ROE. Consequently, other scholars have demonstrated a favourable impact (Pattiruhu and Paais 2020; Bahraini *et al.,* 2021)

Lastly, the duration of insurance companies' existence, represented by the variable "Age," showed a negative but statistically insignificant association with ROE. With a coefficient of -0.02 and a p-value of 0.289, this implied that the age of insurance companies did not significantly influence their ROE, and this relationship may not have been affected by the COVID-19 pandemic.

The R^2 score for the random effects model is 0.718, indicating that about 71.8% of the variance in ROE is attributable to the independent variables. Although this remains a robust match, it is slightly lower than the R^2 values seen in the ROA model, suggesting a greater degree of unexplained variability in ROE. Nonetheless, the model continues to explain a substantial percentage of the diversity in the firms' performance throughout the pandemic.

4.4.1.3 Impact of the COVID-19 pandemic on Tobin's Q

As explained in the preceding chapter, Tobin's Q is also a measure of financial performance. To fully understand the impact of COVID-19 on a company's financial performance, it is crucial to evaluate firm value using Tobin's Q ratio. The results of the investigation are shown in Table 4.5

below. The Hausman test's significance (p = 0.037) suggested that the fixed effect estimation approach was appropriate for data analysis.

Table 4.5 Impact of COVID-19 on Firms' Value

	Random effects model			**Fixed effects model**		
	Coef.	**T-stats**	**P-value**	**Coef.**	**T-stats**	**P-value**
COVID-IMPACT	2.55	0.32	0.747	-2.55	-0.26	0.793
GDP	1.97	0.15	0.880	17.21	1.737	0.088
LSR	-6.94	-3.26	0.000	28.36	3.09	0.000
Interest	-1.40	-0.06	0.955	-2.23	-0.07	0.947
LEV	-1.77	-1.99	0.047	-2.12	-2.03	0.043
LIQ	2.35	2.03	0.043	-0.61	-0.01	0.994
IC	7.24	0.49	0.625	-0.11	-1.89	0.074
Size	-1.81	-2.27	0.021	4.24	2.11	0.035
Age	13.12	2.04	0.042	3.91	2.01	0.044
Constant	7.43	4.29	0.000	4.99	3.41	0.000
R^2	0.804			0.796		
Adjusted R^2	0.890			0.804		
F-stats	154.03			139.78		
Prob. of F-stats	0.000			0.000		
Prob. Of Hausman test	0.037			0.037		

Source: Authors design (2024)

The analysis revealed how the variables influenced the market valuation of insurance companies in South Africa as measured by Tobin's Q. Table 4.5 above shows that the variable COVID-IMPACT had a coefficient of -2.55 and a p-value of 0.793, indicating a negative and insignificant relationship between COVID-19 and Tobin's Q. These results imply that, notwithstanding the pandemic, investors made only minor adjustments to their assessment of insurance companies' worth. These results align with Putra's (2023), indicating no significant connection between COVID-19 and Tobin's Q, which reflects the market's impression of a company's capacity for expansion and profitability regarding its tangible assets. The current study showed that the market's evaluation of insurance firms mainly remained unchanged despite the pandemic.

Table 4.5 demonstrates a positive correlation between GDP and Tobin's Q, but this correlation was not statistically significant, as indicated by a coefficient of 17.21 and a p-value of 0.088. The observed positive association suggested that Tobin's Q increased alongside GDP growth. However, the lack of statistical significance suggested that this link does not possess sufficient strength to be a conclusive determinant of market valuation. Economic expansion, illustrated by boosting demand for insurance products and services, may influence market valuation, but other factors likely play a more substantial role in determining overall market performance. Consequently, during periods of business expansion, firms may have seen increased earnings and profitability, leading to a rise in market value as measured by Tobin's Q. Conversely, downturns, such as those caused by the COVID-19 pandemic, may have resulted in a decline in the market value of insurance companies. These results were supported by Rolle, Herani, and Javed (2020) and Yasmeen *et al.* (2020).

The LSR variable had a coefficient of 28.36 and a p-value of 0.000, indicating a positive statistical significance correlation between LSR and Tobin's Q. Companies with greater loss ratios exhibited higher Tobin's Q values may have followed proactive risk management strategies, such as implementing rigorous underwriting criteria or investing in sophisticated risk mitigation technology, to minimise losses and sustain their competitive advantage. These proactive measures might have increased a company's value and made it appealing to investors, ultimately leading to higher Tobin's Q values, similar to the findings of Dakhlallh *et al*. (2021).

The Interest variable, characterised by a coefficient of -2.23 and a p-value of 0.947, indicated a negative and insignificant relationship between interest rates and Tobin's Q. This suggested that fluctuations in interest rates did not exert a substantial influence on the market valuation of these companies. Despite the economic disruptions caused by the pandemic, the traditional correlation between interest rates and Tobin's Qs was not evident in the study. The absence of significant impact suggests that investors may not have responded robustly to variations in interest rates when assessing insurance companies due to the influence of other factors, such as the unique challenges presented by the pandemic.

The LEV variable had a coefficient of -2.12 and a p-value of 0.043, indicating a statistically significant inverse relationship between LEV and Tobin's Q. This suggested that investors viewed companies with high debt levels as less desirable, leading to a lower market value. The COVID-

19 pandemic intensified this connection as the insurance sector faced increased uncertainty and financial stability issues. Insurers that have a large amount of debt may see a more substantial decrease in their market value under certain circumstances. This involves a worldwide economic crisis brought on by COVID-19 increasing financial market uncertainty that reduces investment profits. Given the heightened uncertainties caused by the pandemic, investors may show a preference for companies that have debt, as they emphasise financial stability and resilience.

The impact of changes in the LIQ variable on Tobin's Q was not statistically significant, with a coefficient of -0.61 and a p-value of 0.994. This suggested that the degree of liquidity does not have a substantial impact on Tobin's Q for insurance companies. The results suggest that the market circumstances seen during the pandemic, characterised by uncertainty and shifts in investor behaviour, might possibly weaken the conventional positive relationship between liquidity and Tobin's Q. In light of these atypical circumstances, investors may be contemplating a wider range of factors, going beyond only liquidity, when evaluating the market worth of insurance companies. This conclusion aligns with the results reported by Soesilo, Gunadi and Vandriani (2020) and Jihadi *et al*., (2021) where the relationship between liquidity and Tobin's Q was negative.

The IC variable exhibited a negative and statistically insignificant connection with Tobin's Q, with a coefficient of -0.11 and a p-value of 0.074. This implies that an increase in the number of claims does not lead to a commensurate rise in the market value of assets. While there could be an increase in claims due to the pandemic, the market may not acknowledge a commensurate gain in the intrinsic value of these firms. These concerns may arise because of doubts about the capacity to consistently generate profits, potential long-term impacts on policyholder behaviour, or concerns about the adequacy of reserves. This outcome may be clarified by modern portfolio theory, which underscores the correlation between risk and return, especially in asset valuation.

The Size variable had a coefficient of 4.24 and a p-value of 0.035, indicating a statistically significant positive relationship between company size and Tobin's Q. This suggested that large organisations had higher Tobin's Q ratios. The COVID-19 pandemic could have exacerbated this perspective even more as big companies are usually considered as more robust during crises and with more means to resolve disturbances. Furthermore, especially in uncertain times, investors can see bigger firms as having more solid investment possibilities and stronger growth potential, which

would help to explain their higher Tobin's Q ratios. This aligns with the results of Al-Slehat *et al.* (2020), who also identified a positive correlation between size and Tobin's Q.

The association between the Age variable and Tobin's Q was also positive and statistically significant, supported by a coefficient of 3.91 and a p-value of 0.044. This indicated that as a firm matured, its Tobin's Q, which gauges its market value relative to the cost of replacing its assets, rose. This positive link suggests that older companies probably because of their stability, well-established track record, and got sector expertise are more positively viewed in the market.

Older businesses also often have more established brand awareness, closer relationships with clients, and demonstrated capacity to withstand economic fluctuations all of which would help investor confidence. Older companies could also be seen by the market as more seasoned in negotiating legislation and maintaining long-term profitability. This pattern might have been particularly important during the COVID-19 pandemic, as established companies could have been more suited to manage problems, therefore maintaining their market value. Research conducted by Liu *et al.* (2021) has shown same findings, indicating that established companies are less exposed to market scepticism, leading to higher Tobin's Q ratios.

The fixed effects model has a R^2 value of 0.796, which means that the independent variables account for 79.6% of the variance in Tobin's Q ratio. The high R^2 indicates that the fixed effects model accurately explains firm value during the COVID-19 timeframe. The incorporation of essential economic elements and firm-specific features contributes significantly to accounting for changes in company value.

4.4.2 Impact of COVID-19 pandemic on environmental sustainability performance

The second research objective was to determine the impact of COVID-19 on the environmental sustainability performance of insurance companies in South Africa. The p-value of 0.037 from the Hausman test indicated that the fixed effects model was appropriate for the study. The multiple regression results are displayed in Table 4.6 below.

Table 4.6 Impact of COVID-19 on Environmental Sustainability Performance

	Random effects model			Fixed effects model		
	Coef.	**T-stats**	**P-value**	**Coef.**	**T-stats**	**P-value**
COVID-IMPACT	2.558	4.32	0.000	2.548	5.26	0.000
GDP	1.977	0.15	0.880	0.527	0.80	0.655
LSR	-0.694	0.26	0.798	0.265	0.09	0.930
Interest	-1.407	0.06	0.955	-2.257	0.07	0.947
LEV	-1.778	1.99	0.047	-2.128	2.03	0.043
LIQ	2.357	4.03	0.000	0.186	4.54	0.000
IC	7.248	0.49	0.625	-2.007	0.01	0.993
Size	1.809	2.27	0.032	3.848	2.11	0.038
Age	0.132	2.04	0.042	0.511	5.02	0.000
Constant	7.439	5.29	0.000	5.119	5.44	0.000
R^2	0.903			0.898		
Adjusted R^2	0.928			0.905		
F-stats	125.93			132.36		
Prob. of F-stats	0.000			0.000		
Prob. of Hausman test	0.037			0.037		

Source: Authors design (2024)

The results shown in Table 4.6 above demonstrate a positive and statistically significant correlation between the COVID-19-IMPACT variable and the selected insurance companies' environmental sustainability performance. The statistical analysis revealed a coefficient of 2.548 and a p-value of 0.000, which indicated statistical significance since it was below the threshold of 0.05. The results suggested that insurance companies had been aggressively prioritising sustainability activities despite the challenges posed by COVID-19.

In agreement with the current study results, Bose *et al*. (2022) and Khan *et al*. (2022) found a strong correlation between COVID-19 and environmental sustainability performance. Furthermore, Navickas, Kontautiene, Stravinskienė & Bilan (2021), highlight the heightened concern regarding corporate accountability for environmental well-being and sustainability projects in response to the pandemic. The pandemic could have heightened the need for companies to actively support environmental well-being. Hrytsai (2021), mentioned that due to lockdowns

and travel restrictions, for example, the COVID-19 pandemic reduced human activities, contributing to environmental degradation and highlighting the need for sustainability projects.

The coefficient of 0.527 and the corresponding p-value of 0.655, as shown in Table 4.6 above, suggested a statistically insignificant but positive association between GDP and environmental sustainability performance. Appiah-Otoo and Acheampong (2021) also found a correlation between GDP and environmental sustainability performance. This result suggests an unforeseen correlation, showing that as GDP increases, there is a fall in environmental sustainability performance, though the decline is not significant. The unexpected discovery may be attributed to several factors, such as the industry's prioritisation of economic considerations above environmental sustainability or the presence of externalities that significantly influence environmental practices. Appiah-Otoo and Acheampong (2021) also found a correlation between GDP and EP.

According to Table 4.6 above, the coefficient for LSR was 0.265, and the p-value was 0.930, indicating a positive but statistically insignificant association between the LSR variable and environmental sustainability performance. Dhar, Sarkar and Ayittey (2022) also found a positive relationship between loss ratio and environmental sustainability. This outcome indicates that, while the correlation lacks statistical significance, insurance companies may have maintained their dedication to sustainable practices despite transient changes in loss rates throughout the pandemic. This indicates that, while these policies may lack a quantifiable financial effect in the near term, companies see environmental sustainability as a fundamental aspect of their corporate principles, acknowledging its significance beyond just immediate financial results.

The findings in table 4.6 indicate that there is not a statistically significant association between interest rates and the environmental sustainability performance of insurance companies in South Africa throughout the period spanning from 2017 to 2022. The observed coefficient of -2.257 suggests a negative association, but it lacks statistical significance. This implies that fluctuations in interest rates do not consistently forecast alterations in the environmental sustainability performance of insurance companies. The absence of a link may be ascribed to a multitude of causes, among which the unique conditions surrounding the COVID-19 pandemic may be considered. During this time frame, insurance companies may have predominantly directed their attention on managing the economic uncertainties and operational difficulties arising from the

pandemic, thus diverting attention away from their efforts in promoting environmental sustainability. This change in concentration may be directly attributed to changes in interest rates during the pandemic. Interest rates are a vital element for insurance firms, since they affect investment returns and financial viability.

A coefficient of -2.128 and a significant p-value of 0.043 indicated a negative correlation between the LEV variable and environmental sustainability performance. These results may be comprehended via the perspective of stakeholder theory, which focuses on a company's relationships with its many stakeholders, such as investors, customers, workers, and society. According to stakeholder theory, corporations must balance the requirements of stakeholders, such as prioritizing environmental sustainability with financial success. This finding provides interesting and thought-provoking insights. The presence of a negative coefficient indicates that when LEV grows, there is a simultaneous decline in environmental sustainability performance. The adverse correlation may be due to the increased financial risk linked to increasing borrowing, leading corporations to prioritise financial stability rather than environmental activities. Throughout the analysed timeframe, the worldwide COVID-19 pandemic brought about economic uncertainty, which might have increased the reluctance of insurance companies to take on financial risks.

The research results revealed a statistically significant correlation between environmental sustainability performance and the LIQ variable (a coefficient of 0.186 and a p-value of 0.000), confirming a strong correlation between LIQ and environmental sustainability performance. This indicated that increased liquidity led to a substantial improvement in environmental sustainability performance. The low p-value strengthened the statistical validity of this correlation, emphasising that enhanced liquidity enabled insurance companies to deploy financial resources towards ecologically sustainable practices, including the adoption of eco-friendly technology, reduction of carbon emissions, and the implementation of green projects (Jyoti & Khanna, 2021).

The correlation between IC and environmental sustainability performance (a coefficient of 2.007 and a p-value of 0.993) indicates a positive but statistically insignificant correlation between IC and environmental sustainability performance. The positive coefficient suggests that, when incurred claims rise, there may be some correlation with sustainability initiatives, possibly owing to increased knowledge of environmental risks affecting claims. The slightly high p-value,

however, suggests that this association is mostly the result of random chance and is not a good indicator of how related incurred claims are to environmental sustainability. This insignificance implies that other elements might have a more significant impact on sustainability performance or that any possible link between claims and sustainability is more complicated than this study can adequately depict. This conclusion aligns with the research conducted by Jha and Rangarajan (2020), which indicated that insurance companies increasingly engage in environmental sustainability initiatives when claims increase, particularly those associated with environmental hazards such as natural disasters.

Table 4.6 demonstrates a link among size, age, and environmental sustainability performance, as shown by the information presented. The regression analysis produced coefficients of 3.848 for size and 0.511 for Age, together with corresponding p-values of 0.038 and 0.000. The results suggest a positive association between the size and age of insurance companies in South Africa and their commitment to sustainability. This underscores that larger companies possess superior capabilities to prioritize and execute sustainability initiatives owing to their scale and resources. In addition, the fact that the coefficient for age is positive (0.511) suggests that older insurance companies are more likely to demonstrate sustainability performance. This may be due to their long-standing commitment to sustainable business practices. Younis and Sundarakani (2020), Orazalin and Mahmood (2020), and Majid *et al*., (2020) each of these studies found a positive correlation between size, age, and the effectiveness of environmental sustainability.

With the fixed effects model examining the impact of COVID-19 on the environmental sustainability performance of South African insurance companies, the R^2 value of 0.898 shows that the independent variables of the model explain 89.8% of the variation in environmental sustainability performance. For the fixed effects model, this high R^2 shows a quite strong Goodness- of- Fit.

4.4.3 Impact of COVID-19 pandemic on Social Sustainability Performance

The third research objective was to determine the impact of COVID-19 on the social sustainability performance of insurance companies in South Africa. Since the Hausman test p-value of 0.193 was not statistically significant, the random effects model was considered appropriate. The multiple regression results are displayed in Table 4.7 below.

Table 4.7: Impact of COVID-19 on Social Responsibility Performance

	Random effects model			Fixed effects model		
	Coef.	**T-stats**	**P-value**	**Coef.**	**T-stats**	**P-value**
COVID-IMPACT	0.782	4.66	0.000	0.411	4.43	0.000
GDP	0.105	0.55	0.585	0.037	2.11	0.041
LSR	0.021	0.58	0.564	0.004	0.11	0.913
Interest	-0.267	-0.70	0.482	-0.006	-0.08	0.000
LEV	0.069	2.07	0.039	0.084	0.54	0.591
LIQ	0.040	4.04	0.000	0.058	2.04	0.042
IC	-3.188	-1.37	0.171	-1.453	-0.42	0.675
Size	2.174	2.97	0.013	0.316	1.99	0.047
Age	0.002	2.02	0.043	0.169	2.38	0.025
Constant	6.721	4.79	0.000	0.915	4.05	0.000
R^2	0.808			0.739		
Adjusted R^2	0.843			0.810		
F-stats	135.02			118.14		
Prob. of F-stats	0.000			0.000		
Prob. Of Hausman test	0.193			0.193		

Source: Authors design (2024)

Table 4.7 shows a strong positive correlation between SRP and the variable COVID-IMPACT, with a coefficient of 0.782 and a statistically significant p-value of 0.000. Moalla and Dammak (2023) also discovered a positive correlation between the variables, showing a link between the pandemic and increased social sustainability performance. Insurance companies in South Africa responded proactively to the challenges posed by COVID-19 by enhancing their efforts in social responsibility. The positive coefficient indicates a direct and proportionate relationship, suggesting that as the severity of the pandemic increased, the firms' commitment to social responsibility likewise increased. This result suggests that the insurance companies acknowledged the social requirements and vulnerabilities that were worsened by the pandemic and took proactive measures in response. The strong correlation highlights the strength of this link, indicating that the corporations placed a high importance on social responsibility as a strategic reaction to the crisis. Engaging actively in social responsibility during difficult periods not only conforms to ethical company standards but also demonstrates a dedication to corporate citizenship.

The coefficient of 0.105 and p-value of 0.585 for the GDP indicated a positive but statistically insignificant link between GDP and social sustainability performance. The identified positive

correlation indicated that a rise in GDP was linked to increased SRP. This suggested that the economy's growth provided a favourable environment for the execution of social sustainability performance. These results highlight the need for insurance companies to demonstrate resilience and adaptability in challenging circumstances while still upholding their commitment to social sustainability performance, especially during difficult times as pandemics. Bukhari, Hashim and Amran (2021), Al-Qudah, Al-Okaily and Alqudah (2021), and Hang (2022) obtained results similar to those of the current study where GDP and social sustainability performance was shown to have a positive association.

Upon analysing the data shown in Table 4.7, it is evident that there exists a statistically insignificant but positive correlation between the LSR and the SRP of insurance companies in South Africa. The coefficient of 0.021 and the p-value of 0.564 demonstrate this. The data indicate that the LSR, which measures financial success, may not have a substantial impact on the adoption of social responsibility initiatives over the analysed period, which includes the effects of COVID-19. Historically, insurance firms have had financial challenges when they have a higher loss ratio. However, the absence of statistical significance in the connection indicates that insurance firms did not significantly alter their dedication to social responsibility, even in the face of financial challenges, as shown by the LSR. The unprecedented nature of the COVID-19 pandemic may have compelled firms to emphasise addressing immediate social needs rather than being only motivated by financial performance metrics. Insurance firms have recognised the growing importance of SRP in handling the crisis and maintaining trust among stakeholders. The findings align with the results provided by Tsatsaronis *et al*., (2024), who discovered a favourable correlation between the LSR and SRP indicators.

A coefficient of 0.069 and a p-value of 0.039 showed a significant positive correlation between the LEV variable and SRP. The findings of the research indicate that insurance companies operating in South Africa have a higher propensity to participate in social responsibility initiatives when they experience a rise in their LEV. The observed correlation could possibly be attributable to the impact of the COVID-19 pandemic. The pandemic has heightened awareness about environmental concerns, compelling firms to reevaluate their goals and prioritise making societal contributions. Insurance firms, confronted with difficulties due to the pandemic, may have used their corporate social responsibility programmes to strengthen their standing in the community and

cultivate closer connections with stakeholders, given the heightened societal expectations. The results presented in this study align with the conclusions obtained by Awaysheh *et al.*, (2020), in which they found positive correlation between LEV and SRP, and they contrast with the findings that were presented by Sekhon and Kathuria (2020) where they found negative correlation between the two variables.

The data shown in Table 4.7 unequivocally illustrates a positive correlation between LIQ and the commitment of South African insurance companies to social responsibility. The coefficient of 0.040 and a p value of 0.000 indicate a significant and positive correlation between the LIQ levels of companies and their propensity to engage in social responsibility initiatives. This conclusion shows that companies with substantial assets are better suited to successfully allocate funds to social causes, address social needs, and support community initiatives. Amidst the challenges posed by the COVID-19, which have led to increased societal demands, the need of providing liquidity to assist companies in meeting urgent needs has become even more apparent. This discovery aligns with stakeholder theory, which emphasises the need for businesses to take into account the interests and concerns of all stakeholders, rather to only prioritising shareholders.

Furthermore, a further analysis of Table 4.7 reveals a clear positive and insignificant correlation between interest rates and the involvement of South African insurance companies in social responsibility programmes throughout the specified time frame. The correlation coefficient of 0.267 and a p value of 0.482 suggest that variations in borrowing rates did not have a significant impact on these organisations' inclination to engage in social initiatives. The lack of significance suggests that fluctuations in interest rates had no impact on the extent to which these insurance companies carried out social responsibility initiatives.

The data in Table 4.6 highlight an essential element of the South African insurance industry. It specifically emphasises that there is a negative and insignificant link between IC and the performing of social duty. This is evidenced by the coefficient of -3.188 and a statistically insignificant link (p= 0.171) between IC and SRP. This implies that when IC grows, the dedication of insurance firms to social responsibility efforts decreases, and vice versa. This might imply that at times of higher claims, including as brought on by the COVID-19 pandemic, their priority may turn to controlling claims payments and guaranteeing liquidity, therefore reducing social

responsibility activities. Olanrewaju, Ishola and Ibrahim Abubakar (2020), brought to light the fact that there is a negative correlation between claims that have been incurred and SRP.

The data shown in Table 4.7 demonstrates that the coefficients of 2.174 (p-value = 0.013) and 0.002 (p-value = 0.043) suggest a solid and statistically significant correlation between the size and age of South African insurance companies, and their SRP. The presence of a positive coefficient of 2.174 indicate a positive correlation between firm size and SRP, implying that bigger insurance companies are more likely to demonstrate greater levels of social responsibility. This suggests that when insurance companies expand their operations, they become more capable of allocating money towards social projects, including programmes for community development, efforts towards environmental sustainability, and schemes for employee welfare. This conclusion highlights the significance of strong corporate social responsibility policies for major insurance firms in South Africa in light of the COVID-19 pandemic.

Large companies have the advantage of using their resources and influence to tackle urgent social needs that have been worsened by the pandemic, such as reducing poverty, improving healthcare access, and promoting economic recovery. Additionally, the coefficient of 0.002 pertaining to the age of the company suggests that there is a positive association between the social responsibility performance of older insurance companies and their age. This implies that companies that have been in operation for a longer period of time are more inclined to prioritise and maintain social responsibility projects in the long run. In light of the persistent difficulties presented by the pandemic, these companies, by serving as pillars of stability within the sector, had the potential to significantly contribute to the advancement of sustainable development and social welfare programmes. These findings are consistent with the findings that were obtained by Aziz and Haron (2021) and Bag and Omrane (2022).

The R^2 for the random effects model is 0.808, hence the independent variables of the model explain around 80.8% of the variance in the social sustainability performance of South African insurance firms. This high R^2 value indicates that the chosen variables including the influence of COVID-19 urther effectively capture the drivers of social sustainability performance based on company characteristics.

4.5 Chapter summary

In this chapter, the researcher presented the statistical research results and discussed them in consideration of the research objectives. The researcher highlighted key patterns, offering a thorough interpretation of the data gathered to determine the impact of the COVID-19 pandemic on the financial and sustainability performance of selected insurance companies in South Africa. This chapter conveyed the empirical results, integrated them into the theoretical framework established in earlier chapters, and aligned them with the literature, ensuring a comprehensive understanding of the study's outcomes.

Firstly, the chapter presented the descriptive statistics, followed by details concerning the multicollinearity test and its results, and finally, explained the multiple regression analysis and its outcomes. The findings provided insights into the extent of the pandemic's impact on the insurance sector and the implications for financial stability and sustainable practices in the industry.

CHAPTER FIVE
SUMMARY, CONCLUSIONSAND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher presents a summary of the dissertation. In addition, the chapter provides a synthesis of the empirical results. The chapter concludes with recommendations for insurance companies concerning mitigating financial risks and commitment to social and environmental sustainability performance, even during crises. Furthermore, the chapter suggests areas for future research to enhance understanding of the impact of COVID-19 on the financial and sustainability performance in the insurance sector.

5.2 Dissertation summary

The dissertation comprised five chapters. The first chapter presented a brief background and overview of the study, detailing the research problem, aim, objectives, and questions. In addition, the chapter provided the study's significance and the structure of the dissertation.

Chapter 2 analysed the conceptual literature, with a special emphasis on the worldwide implications of the COVID-19 pandemic on insurance companies. It also delved into the specific effects in South Africa as a developing country. Additionally, the chapter explored the various components of the insurance sector, as well as the regulatory issues and types of insurance. The literature review addressed differing perspectives on the pandemic's impact, with some researchers highlighting difficulties such as increased payment demands and economic instability. Additionally, this chapter examined three guiding theories stakeholder theory, modern portfolio theory, and resource-based theory to clarify the connection between insurance companies' financial and sustainability performance.

In addition, Chapter 3 included a comprehensive examination of the study process, showcasing the precise methodologies used to conduct the research. Furthermore, this chapter defined the research paradigm and design employed, the sources and technique for data collecting including the population of the study. The chapter elaborated on the tools employed for data collection and the methodologies employed to ensure the accuracy and consistency of the data. The study was

conducted within the positivist research paradigm, which perceives reality as a solid structure and asserts the existence of a sole truth. The study's sample consisted of all thirty-seven (37) companies that were listed on the FSCA as of December 2022. In addition, the study utilised three primary sources of data: MacGregor BFA, and the firms' annual reports. A total of 222 annual reports were examined in detail.

Chapter 4 began by addressing the first objective, which is to assess the influence of COVID-19 on the financial performance of insurance firms. Financial performance was assessed using the metrics of ROA, ROE, and Tobin's Q ratio. The degree of trend and the potential factors that might influence the trends were meticulously determined. The chapter conducted a comprehensive analysis of the literature to come to conclusions on the present results of this research. Descriptive data analysis was used to evaluate the environmental and social responsibility activities of insurance companies. In addition, both random and fixed effect models were used to examine the connection between the variables presently under investigation. The last section of the preceding chapter explored more into the correlation between COVID-19 and the fulfilment of social responsibility. In this study, we went further into the second objective. The key objective of the second goal was to examine the relationship between the COVID-19 pandemic and the environmental sustainability initiatives undertaken by insurance companies in South Africa. The present findings were examined in relation to prior studies, and their implications were thoroughly examined in order to derive conclusions.

The present chapter 5 of the study, which seeks to provide a summary of the complete investigation, highlighted the important findings. Moreover, this chapter provides recommendations to reduce risks and maintain commitment to social and environmental sustainability practices, even in times of crisis. It also includes suggestions on areas of focus for future researchers to enhance the current understanding of the impact of COVID-19 on the financial and sustainability performance. The section that follows provides the summary of the results and the conclusions drawn from it

5.3 Summary of research results and conclusion

The first goal was achieved by an analysis of the influence of COVID-19 on the financial performance of insurance firms. The financial performance was evaluated by examining the

metrics of ROA, Return on Equity, and Tobin's Q ratio. The study utilised a multiple regression analysis technique to investigate the relationship between variables. An examination of performance with the Return on Assets metric revealed a favourable and statistically significant correlation with COVID-19. The existence of this positive association indicates that insurance companies effectively adapted their business strategy to mitigate the disruptions caused by the pandemic. This is associated with an increase in the need for insurance products, the introduction of innovative risk management strategies, and the adoption of prudent investment approaches. It is crucial to recognise that the insurance industry often plays a crucial role during periods of economic uncertainty, as individuals and businesses work to mitigate and control various risks. The results are consistent with the Resource-Based Theory, since the increase in demand for insurance products during the pandemic, along with the industry's ability to adjust, indicates that certain resources possessed by these firms have become very valuable amid the crisis. The results show a significant negative association between COVID-19 and ROE, meaning the pandemic severely reduced the profitability of insurance companies. However, the negative and insignificant link shown by Tobin's Q ratio, an indicator of market valuation, suggested that the pandemic had no appreciable impact on the market's perception of these companies' value. This would suggest that insurance companies were able to adjust successfully by strong risk management methods or by grabbing fresh possibilities that arose from changes in the market environment, therefore preserving confidence in the market despite the financial difficulties caused by COVID-19. This discovery is consistent with the findings reported by Periokaitė and Dobrovolskienė (2021).

The second objective was achieved by an analysis of the influence of COVID-19 on the environmental sustainability performance of insurance companies in SA. The results revealed a positive and statistically significant association between COVID-19 and environmental sustainability. The ongoing Covid pandemic has increased the recognition and desire for eco-friendly products and services. Insurance companies may have been required to align their operations with environmental sustainability goals. For the third objective, there was a positive and significant link found between COVID-19 and social responsibility performance. The findings provide strong and reliable evidence in favour of stakeholder theory, which promotes the idea that businesses should consider the varied interests and well-being of all stakeholders, rather than only prioritising shareholders. Insurance companies have several stakeholders, such as policyholders, employees, communities, regulatory bodies, and society.

The results shows that there is a link between the success of insurance companies and their response to social issues, indicating that these organisations are recognising and addressing the broader impacts of COVID-19 on the environment. The insurer set strategies for reducing their environmental impact and set funds to help environmentally friendly projects. Insurance companies demonstrate their commitment to the environment and their adherence to the principles of stakeholder theory by their activities. These activities may include promoting the overall welfare of the community, advocating for inclusivity, ensuring compliance with employment standards, and fostering the ability to recover from challenges. The stakeholder theory emphasises the need of considering the consequences of company activity. The significant correlation between COVID-19 and social performance implies that insurance firms are responsive to the demands and anxieties of stakeholders.

In conclusion, the study revealed that COVID-19 had a mixed effect on South African insurance firms' financial performance. The pandemic provided benefits despite the fact it presented difficulties, especially for financial indicators like Tobin's Q and ROE. As seen by the rise in ROA, it increased operational efficiency and that raised industry attention on sustainability. Despite the challenges, insurance firms understood that long-term prosperity depends on environmental and social responsibility and so All things considered, COVID-19 had two effects on the South African insurance industry: it enhanced efforts toward sustainability while it had mixed effect on the financial performance of insurance companies.

The results underline the vital requirement of adaptive company strategies and excellent risk management skills to survive unanticipated catastrophes. The favourable correlation between COVID-19 and both social and environmental sustainability performance suggests that businesses that match their activities with sustainability objectives are more suited to control crises. Insurance companies are urged to support environmentally friendly projects and improve their involvement of stakeholders as these approaches not only increase social responsibility but also improve long-term company resilience and market trust. The mixed effect on financial performance suggests the necessity of more strong financial planning and strategy changes during crises as it means that businesses must also carefully balance short-term profitability with long-term sustainability.

5.4 Recommendations for insurance companies

Prior to providing recommendations, the researcher deemed it crucial, based on the outcomes of this study, to elucidate the ways in which these findings would contribute to the existing body of knowledge. This study provides invaluable knowledge into how outside factors, such as a worldwide pandemic, impact the financial health and resilience of the insurance industry. Gaining insight into the precise financial difficulties encountered by these companies throughout the pandemic will enlighten stakeholders, regulators, and industry leaders about efficient risk management tactics and the need for legislative modifications to uphold the ongoing stability of the insurance market. Furthermore, the research also examined the environmental sustainability element. This part of the study provides insight into how problems like the pandemic accelerate efforts towards environmental sustainability in the insurance sector. The results will greatly assist insurers in adjusting their sustainability policies to more closely match with environmental objectives during uncertain times, eventually contributing to larger conversations on the junction of corporate resilience and environmental stewardship. This study enhances the comprehension of how insurance firms function as social actors during crises, emphasising the significance of sustaining social cohesiveness and support networks. The results may provide insights for improving social sustainability practices, strengthening resilience, and encouraging inclusion in the insurance industry. This will contribute to the ongoing dialogue on the social aspects of business sustainability in difficult situations.

The implications and insights derived from the results of this research are significant for insurance companies and other organisations as they navigate the difficulties presented by the COVID-19 pandemic. Insurance companies should prioritise the adoption of a flexible financial management approach, with particular focus on adaptability and responsiveness to external disruptions. It is essential to address these problems since they may have diverse effects on financial metrics, including Return on Assets and Return on Equity. The implementation of strategies that prioritise the successful use of assets and the protection of shareholders' equity is important. Furthermore, the unforeseen association between the COVID-19 pandemic and several measures of sustainability, including both environmental and social aspects, underscores the need of integrating sustainable practices into a company strategy. Insurance companies have the opportunity to use this favourable situation by incorporating sustainable practices more extensively into their

fundamental objectives. This is not only a reaction to external crises, but rather a continuous dedication to corporate social responsibility. During times of adversity, it is essential for stakeholders, including investors and governments, to see the potential for constructive sustainability changes and endorse activities that harmonise economic success with wider environmental and social goals. In overall, the research suggests that insurance companies should adopt a comprehensive and flexible strategy, prioritising both financial stability and sustainability practices, to succeed in an ever-evolving global landscape influenced by extraordinary occurrences like the COVID-19 pandemic.

Additionally, it is crucial for regulators and policymakers to reassess current frameworks in order to promote favourable practices within the insurance market. It is important to contemplate the use of incentives to encourage corporations to embrace socially responsible practices that promote a harmonious relationship between economic goals and larger societal and environmental ambitions. Exploring the underlying mechanisms that explain the positive relationship between COVID-19 and sustainability indicators might lead to a more sophisticated comprehension.

Based on the research results, the researcher recommends the following for insurance companies:

Flexibility in business strategy: Considering the favourable relationship between ROA and COVID-19, insurance firms should give flexibility and adaptability top priority in their business strategies. As demonstrated by the growing demand for insurance products during the pandemic, this adaptability will help businesses to react quickly to disturbances and seize new possibilities.

Create Prudent Investment Strategies: The research underlined the major influence of COVID-19 on ROE, thereby stressing the necessity of insurance companies to carefully consider available investment choices. Through matching investments with long-term sustainability goals, companies may improve profitability and properly negotiate market changes. These covers assessing the hazards connected to social and environmental elements influencing their financial situation.

Stakeholder engagement: The results confirm the relevance of stakeholder theory as they illustrate how actively involving many stakeholders helps insurance businesses improve their social sustainability performance. Particularly in times of crisis like COVID-19, businesses should use policies that handle the many issues and expectations of stakeholders like policyholders, staff, and communities.

Prioritize Social Sustainability Programs: The positive impact of COVID-19 on social responsibility performance shows companies should give projects improving community well-being top priority. This include encouraging diversity, guaranteeing adherence to work rules, and helping local areas in their rehabilitation. Companies that accomplish this not only satisfy stakeholder expectations but also enhance their brand recognition.

Commitment to environmental and social stewardship: Lastly, insurance companies should openly show their will to minimize their environmental impact and assist projects with social and environmental consciousness. This dedication will assist stakeholders to develop confidence and trust in line with the recorded patterns in social and environmental sustainability performance during the pandemic.

5.5 Limitations and strength

The study has limitations in terms of the size, setting, and methodological approach that have been employed. The researcher's analysis was confined to examining the effects of COVID-19 on the financial and sustainability performance of insurance businesses in South Africa. This indicates that the data was only restricted to Insurance Companies located in South Africa. Hence, the conclusions derived from this research cannot be extrapolated to other industries, such as the banking industry. The researcher was constrained to employing a quantitative study design. As a result, the outcomes may vary compared to the findings of other studies that utilized a different methodology such as mixed methods. Nevertheless, despite the inherent constraints of the study, it yielded dependable results regarding the influence of COVID-19 on the financial and sustainability performance of insurance businesses in SA.

On the other hand, the study's strong points include its solid quantitative approach which embraces a positivist research philosophy. This ensures that data gathering, and analysis are done properly. Regression analysis enables a thorough investigation of the connections between the consequences of COVID-19 and financial metrics like ROA, ROE, and Tobin's Q. This analysis provides empirical evidence of how these variables are influenced during moments of crisis. Furthermore, the study's findings of statistically significant positive correlations between COVID-19 and social responsibility, as well as environmental sustainability, emphasize its relevance to comprehending how South African insurance companies respond to societal and environmental difficulties during

difficult times. This research provides vital insights to academic literature and practical implications for industry stakeholders and policymakers who are dealing with uncertain global contexts by resolving its limits and utilising its strengths.

5.6 Recommendations for future research

Future research could enhance understanding by doing the following:

Distinguishing between short- and long-term insurance: Future study might benefit from examining the different effects on short-term compared to long-term insurance products given the varied effects of COVID-19 on financial performance variables like ROA and ROE. Knowing how each sector of the insurance industry reacted to the pandemic might help one to better identify certain weaknesses and resilience techniques in numerous domains of life.

Using a mixed-methods, case study research design: The quantitative results of the research emphasize the necessity of further investigation of the qualitative aspects of how insurance firms negotiated the pandemic. Using a mixed-processes approach combining quantitative analysis with qualitative case studies can help to provide a whole picture of the policies and methods used by insurance companies. This would enable studies to record the contextual elements affecting operational adjustments and decision-making during COVID-19.

Investigating sustainability practices: The positive associations between COVID-19 and social and environmental sustainability performance imply that the pandemic could have sped up already underway sustainability projects in the insurance industry. Future studies should look at whether businesses with prior sustainability commitments changed their operations in reaction to the pandemic or whether the crisis served as motivation for businesses starting fresh sustainability initiatives. This study could provide important light on how COVID-19 will affect business sustainability paths over the long run.

Evaluating the Function of Risk Management Strategies: Future studies should look at the particular risk management techniques businesses used throughout the pandemic given the noted correlation between COVID-19 and the financial health of insurance companies. This may involve examining how various businesses used their resources to fit changes in the market and how these

approaches affected their general productivity. Knowing effective risk-management strategies can help insurance companies create resilience against next disturbances.

5.7 Chapter summary

In summary, this chapter summarised the dissertation and the research results concerning the impact of the COVID-19 pandemic on the financial and sustainability performance of insurance companies in South Africa and the conclusion. The recommendations for practice and future research might enhance the industry's resilience and adaptability to external disruptions, ensuring a sustainable and robust insurance sector.

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APPENDICES

Appendix 1 List of Insurance Companies

ABSA Insurance Company Limited	King Price Insurance
AIG South Africa Limited	Clientele Life Insurance
Alexander Forbes Insurance Company Limited	Capital Alliance
Allians Global Corporate	Discovery Insure Limited
Bidvest Insurance Limited	Hollard Insurance Company Limited
Bryte Insurance Company (RF) Limited	Liberty Mutual insurance
Clientele General Insurance Limited	OUTsurance Insurance Company Limited
Hollard Insurance	MMI Holdings Limited
Mutual and Federal Insurance	SAGE Life
Guard Risk Insurance	Metropolitan Life
Standard Insurance Company Limited	MiWay Insurance
1 Life Direct Insurance	WesBank Insurance
AVBOB Mutual Insurance	Santam Limited
Allan Gray Life	Old Mutual Insure Limited
Assupol Life	Momentum Insurance Company Limited
First for Women Insurance Company (RF) Limited	Guardrisk Life Limited
Bidvest Life Limited	Affinity Life Limited
King Price Life Insurance Limited	Nestlife Assurance Corporation (Rf) Limited
Zurich Insurance Company	