Sensitivity analysis of the impact of Covid-19 on corporate sustainability and company performance: Recovery strategy for companies and nations around the world

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ABSTRACT

The study examined the sensitivity analysis of the impact of Covid-19 on Corporate Sustainability and Company Performance of South African listed companies. The study employed secondary data retrieved from the annual reports of the selected companies. Stakeholder Theory and the Traditional Theory of Economics and Finance from the theoretical foundation of this study. Data retrieved from 40 companies for the period 2010 - 2021 was analyzed using panel fully modified ordinary least squares (FMOLS) and dynamic ordinary least square (DOLS) methods, representing all sectors with the help of a convenience sampling method. Findings revealed a strong relationship between corporate sustainability performance and company performance with other explanatory variables. This study also implied that the impact of the Covid-19 pandemic was so sensitive on South African companies and companies must pay strong attention to recovery strategies suggested to reduce the severity of the impact on them and ensure a quick recovery.

Introduction

The Covid-19 pandemic caught the world unaware and was officially declared a pandemic by the World Health Organization (WHO) on the 11th of March 2020. It originated in a city in China called Wuhan in December 2019, and cases spread very fast all over the world, leading to the loss of many lives. This prompted many sovereign countries to implement stringent actions all over the world to curtail and address the situation. Part of the actions taken are social distancing, wearing a face mask, hand washing and sanitizing, as well as case isolation to reduce or limit the rate of transmission. The worst of all was the total lockdown that paralyzed and adversely affected global economics and negatively affected business operations and supply chains internationally (Dev and Sengupta, 2020; Ibn-Mohammed et al. 2021).

Today, more than 200 nations have been affected by this novel pandemic worldwide. Over 150 million people have been confirmed cases of Covid-19, while over 3 million are confirmed death cases (Worldometer, 2021). Apart from the loss of lives, the magnitude of the damages and havoc the pandemic caused to nations’ economies, company sustainability and company performance is unquantifiable. Many scholars such as Pu, Qamruzzaman, Mehta, Naqvi and Karim (2021) revealed that the pandemic has brought great havoc to the global economy and had a negative implication on business sustainability. There is no doubt that the pandemic has caused an unprecedented global economic disruption and has challenged the world’s social and environmental sustainability, which led many researchers to forecast a global economic recession (Engler et al. 2021). Some, like Telukdarie, Munsamy and Mohlala (2020), predicted that Covid-19 challenges might not be short-term but might rather be something to live with for life. They likened it to Ebola, HIV/AIDS, SARS, Polio, and so forth, which are still prevalent in the world today. In addition, other scholars such as...
Gelter and Puaschunder (2020) linked it to the 2nd World War and Great Depression’s historical and evolutionary antecedent that led to the re-configuration of corporate governance, and which would be needed as a lasting solution.

Past studies (Telukdarie, Munsamy and Mohlala, 2020) have mainly focused on the health impact of a pandemic. However, the area of health impact is saturated, but the extent of the damage and the shocks caused by the Covid-19 pandemic to corporate sustainability and corporate performance also need to be examined. This will highlight corrective actions to be taken by governments and by companies to bring those companies back on track. This study is also important because so many companies have been inflicted, that the damages and shocks are hidden such that, if urgent action is not taken, the world might experience more corporate failures and further distress cases which may lead to world economic depression. To avert this, companies must act fast and be sensitive enough to correct everything that needs to be corrected.

Prior studies related to this study have revealed that Covid-19 led to bankruptcy, loan repayment defaults and the closure of many companies and businesses (Menon, 2021). Employees experienced salary cuts during this period, some were even laid off and some were even given compulsory and terminal leave without pay (Adejare et al. 2021). However, no one knows the extent of the havoc, but quick responsive and corrective action is highly necessary from companies and governments, which could reduce the impact on both the immediate and future performance and sustainability of companies. The pandemic does not only claim lives and inflict infections that break down the human immune system, but it has also posed severe challenges to the achievement of the Sustainable Development Goals (SDGs), especially in developing nations rather than developed economies (Honigsbaum, 2020; Meramveliotakis and Manioudis, 2021; Ganda and Ngwakwe, 2014; 2013).

While some countries are still vulnerable and undergoing a recovery process, some are passing through difficult times as part of the ripple effect of the pandemic (Javed, 2020). Today, while the pandemic has almost permanently gone from some countries such as China, some are still battling with third or fourth waves and shockingly others are experiencing different variants of Covid-19. Its resurgence and changing nature are currently aggravating the situation and posing more threats to people’s health, many nations’ economies and the world economy at large. For instance, it has metamorphosed into different variants, such as the Omicron variant of Covid in South Africa in November 2021, the Alpha variant, the Beta variant, and so forth. To predict the total end of this pandemic because of its dynamic nature may be very difficult because it might not go into total extinction as people think. Presently, South Africa is considering another lockdown if the situation gets worse concerning the discovery of the Omicron variant of Covid-19. The country is still trying to recover from the shock of the initial Covid-19 variant, and one cannot but imagine what the effect will be if the country goes back into another total lockdown, as the effect will be terrible on companies and on the nation’s economy. This is the problem that this study needs to address- to look at the dynamic nature of this pandemic and to see how companies within South Africa could manage the situation. Studies on recovery strategies of companies and governments have not been widely covered, which forms part of the problems that this study covers and adds to the extant body of literature.

Companies’ recovery, survival strategy and the sustainability of both SMEs and companies are important for economic sustainability and for SDGs to be achieved. Therefore, it is germane to study how to facilitate the recovery process for companies after the great pandemic, as suggested by Pu, Qamruzzaman, Mehta, Naqvi and Karim (2021). The pandemic is an external shock that exposes companies to risks and can profoundly affect corporate governance because it has been proven that it has a negative impact on macroeconomic variables (Gelter and Puaschunder, 2020). Anything that has a negative influence on the company environment will equally affect the company’s governance. The study was embarked upon because it serves as an insight to investors and entrepreneurs into the type of investment decisions to adopt and the best combinations of portfolios to have, especially during and after the pandemic. It would also help managers of companies to make informed decisions leading to the quick recovery of companies since the study would have discovered the extent of damages caused by the pandemic. Another reason for this study is to sensitize companies and all stakeholders on the possible dangers of Covid-19 so that corrective measures can be taken from inferences drawn for quick recovery. Therefore, it is very important and timely to embark on this study in South Africa, not only because of the severity of the pandemic in the country but also because of its resurgence into another variant called omicron.

The question of how quickly companies can recover rests solely on individual companies’ capability to maintain and adjust, considering the level of the havoc caused by this pandemic. The truth is that companies’ sustainability and performances have been threatened recently due to the shock of the outbreak of Covid-19, which caught the world unaware. Companies are still living with this shock and if this is not curtailed, it may worsen the future performances of companies. Hence, this calls for further research in order to determine the level of impact of this pandemic on companies and how sensitive these companies are to shocks from Covid-19. The truth is that while the impact was favorable for some firms in certain industries, especially pharmaceutical companies, it was unfavorable to some, like the Tourism industry (Dude, 2021), transportation industries and others. Some share both favorable and adverse impacts, for example, the medical industry.

This study is limited to South Africa as a nation because of the new Covid-19 variant that was just discovered, called Omicron. The study focused on the firm-level impacts and sustainability threats posed by Covid-19 on company performance. The importance of this study is that it would help to determine the level of the financial soundness of companies through historical and forward-looking investigations into financial statements during this pandemic period and the years before the pandemic (IMF, 2021). The two periods were compared to forecast the future performance of those companies. This study considered the dynamic and changing nature and discovery of the new Covid-19 variant in South Africa as a source of further challenges and threats to companies’ sustainability and...
performance. It is imperative for companies within a nation to be technologically, socially, economically and environmentally sustainable in order for their country to be sustainable as well. This type of study, to the best of the researcher’s knowledge, has not been carried out within the African context and has been sparsely studied in world literature. It is this gap that this study covered. To solve the above problem, the study evaluates the impact of the pandemic on corporate sustainability and companies’ performance. The study further reviewed prior suggestions and recommendations from scholars to determine the best recovery strategy for companies to adopt to improve their sustainability and performance. For these objectives to be achieved, this study question:

Does Covid-19 pandemic whether impact both corporate sustainability and company performance or not?

Other parts of this study are arranged as follows: a review of related literature that covers both concepts and theoretical background; the data source and methodology; analysis and interpretations; and a conclusion.

Literature Review

Company performance is highly important to all stakeholders (Ganda et al. 2015), just as value maximization is germane to shareholders through returns. Stakeholders are no more satisfied with companies’ yearly returns or performance, they want more assurance and more information about the future security of their investment in such companies. How companies can create yearly profit is important, but how to sustain and remain in the market into the foreseeable future is paramount. However, the recent pandemic has, over the last two years, called for the need for new research around corporate sustainability. Prior studies have revealed that the pandemic negatively impacted companies and that several companies ceased operations because of this pandemic (Menon, 2021).

Corporate sustainability in this study is substantiated by one of the fundamental concepts of accounting, the ‘going concern’, which is the ability of companies to make a profit, create value and sustain such value for the foreseeable future. Sustainability also means considering the future from today by meeting the present needs. Stakeholders such as investors would like to commit their resources to companies with a high quality of goodwill and very strong sustainability profile. Bankers would want more assurance that the ability to get their loans back remains strong and shareholders want the company’s value to be maximized. Unfortunately, Covid-19 has made many stakeholders doubt the sustainability profile of companies, which raises the need for further research. Thus, the study adds to the existing literature. It considers how the present performance of companies can continue to improve even amidst future uncertainty or pandemics. To achieve that, the study investigated the level of impact of a pandemic on companies and their possible hindrance to the company performance by even shortening their lifespan and suggesting a possible quick recovery strategy that can be useful and applicable to all companies.

This led to the theoretical literature that underpins this study. Stakeholder theory and the Traditional theory of Economics and Finance from the theoretical foundation of this study. Stakeholder theory states that while maximizing shareholders’ value, other stakeholders should be taken into consideration (Abdullah and Valentine, 2009). The theory preaches that both shareholders and other stakeholders should be considered simultaneously. It further states that while considering all other stakeholders, the value will be created, sustained and maximized. On the other hand, the Traditional theory of Economics and Finance states that the performance of companies is affected by company-level factors, the macro environment and market availability (Moskowitz and Grinblatt, 1999). By implication, what happens to a company’s macro environment is important because it determines the performance of companies which later transforms to value maximization or value destruction. The recent pandemic is an environmental issue (Engler et al. 2021) that can either make companies or mal companies if care is not taken. This leads to the review of extant studies to generate gaps in the literature and to discover the extent of past work done.

Extant studies were reviewed to establish gaps and the extent of the havoc caused by the pandemic and the possible quick recovery to embark on. Alao and Gbolagade (2020) formulated a framework for business revival after the pandemic from a Management and Accounting point of view. The authors revealed that for business resilience and sustainability and quick recovery from major disasters, the efficient management of liquidity, people and stakeholders’ engagement should be given priority. Queiroz, Ivanov, Dolgui and Wamba (2020) investigated the impact of the pandemic on the supply chain and revealed a negative impact. They suggested further studies to cover the areas such as companies’ adaptation, ripple effect, sustainability, recovery and digitalization. Javed (2020) examined the impact of the Coronavirus outbreak on the Pakistan economy and revival measures and the findings revealed that the pandemic hit the economy hard and that a quick recovery policy from the government is needed.

Meramveliotakis and Manioudis (2021) investigated the relationship between Covid-19 and Sustainable Development through SMEs, revealing an inverse relationship between the pandemic and sustainable development because so many SMEs ceased operations during this period. They suggested that countries need to re-strategize, concentrate and centralize capital on economic recovery strategies to facilitate quick recovery and correct every havoc from the pandemic for a formidable sustainable development. Gelet and Puaschunder (2020) examined the pandemic and corporate governance, considering an evolutionary perspective and suggested resilience, corporate laws, more orientation and stakeholders’ interest involvement for re-shaping the trend and for quick corporate recovery. Dube (2021) studied the implications of Covid-19 for South African tourism firms, finding a devastating impact on firms within the industry. Suggested financial aid packages such as tax reductions, easy access to loans with little or no interest rates, stringent health methods and education on vaccinations to support the industry recovery rate were advocated. Pu, Qamaruzzaman, Mehta, Naqvi and Karim (2021) studied government intervention through innovative finance and technological adaptation on SMEs’
sustainability during Covid-19 in Bangladesh and found a positive acceleration with innovative finance, government policies and quick technological adaptation. They suggested policy formulation and strategy implementation be initiated by governments and companies for quick recovery. Miller, Tang, Xu and Le Breton-Miller (2021) studied the relationship between corporate social responsibility and social distancing during the pandemic and their results revealed that firms exhibited higher levels of CSR and social distancing during the Covid period.

Telukdarie, Munsamy and Mohlala (2020) reviewed prior studies and conceptualized a model with food and beverage firms in South Africa. The authors revealed that Covid-19 negatively impacted firms in this sector and they suggested a quick recovery and adaptation strategy through government assistance. Liu, Manzoor, Wang, Zhang and Manzoor (2020) evaluated the short-term impact of the pandemic on 21 leading stock markets, revealing that more negative and abnormal returns were experienced in Asia than in other countries. Qin, Godil, Khan, Sarwat, Alam and Janjua (2021) examined Covid-19’s impact and health expenditure on supply chains globally, and the results revealed a significant negative impact between Covid-19 and supply chain and health expenditure under fixed effects and GMM. The authors suggested that government should act fast in formulating policies that will engender the quick recovery of companies to avert economic crises.

Huynh, Truong, Duong, Nguyen, Dao and Dao (2021) investigated the damages caused by the pandemic to the Tourism industry in developing industries and revealed that Tourism firms in these countries were greatly affected by the pandemic. They further revealed that many companies within this industry are on the brink of bankruptcy or insolvency and suggested a quick economic recovery policy that can support and save these companies from complete distress. Menon (2021) studied the impact of Covid-19 on the small-scale sector and revealed that the pandemic adversely affected SMEs in the local area under review. He recommended government support for those small-scale businesses as they control 54.77% of GDP. Adejare, Olare, Udofia and Adenigba (2021) examined Covid-19 and business survival and their results revealed that Covid-19 negatively impacted business survival in Nigeria, leading to a loss of jobs, increased unemployment, business closure, reduced companies’ productivity and GDP, which suggested that companies should integrate modern-day technology into business operations for survival and the smooth running of the business. Huang and Farboudi Jahromi (2021) developed a conceptual model for service industry resilience-building strategies, which is expected to provide resilience during and post the pandemic.

Sajan (2021) evaluated the performance of SMEs before, during and after Covid-19 and the possible impact on the Indian economy. Findings revealed that performance during lockdown is considerably and comparatively lower than in the pre-lockdown phase. Rizvi, Yarovaya, Mirza and Naqvi (2020) investigated the extent to which Covid-19 deteriorated the value of companies and their findings revealed a significant loss in value through losses in revenue and increases in costs of equity over all sectors. Baral, Singh and Kazancoğlu (2021) developed a model during the pandemic for the survivability of sustainable supply chains of SMEs, in which findings revealed that variables contribute significantly towards the model fit. Elavarasan, Shafiullah, Raju, Mudgal, Arif, Jamal and Subramaniam (2020) studied impact analysis and recommendations in the power sector, revealing that electricity demand reduced significantly during Covid-19 but significantly increased in residential load demand, which suggested the provision of a disaster management plan.

Hamal and Gautam (2021) examined the impact of the pandemic on the volatility of stock markets, market returns and government response to the Covid-19 pandemic on stock market performance. Their work revealed that both pandemic and government policy had a significant and adverse impact on stock market volatility, return and performance but in the long run stabilizes and revives. Ibn-Mohammed, Mustapha, Godsell, Adamu, Babatunde, Akinладe and Koh (2021) reviewed the catalogue of both positive and negative impacts of Covid-19 and proffered ways to leverage the situation, such as government policies at the national level that can help the global economy. Khan, Niazi, Nasir, Hussain and Khan (2021) examined the effect of Covid-19 on hospitality companies, revealing that perceived job insecurity and economic crisis, unemployment growth and mental health are positively related. Moreover, Ofori-Boaitey, Ohemeng, Agyapong and Bribinti (2021) examined the pandemic’s impact on stock returns in Ghana and revealed that the outbreak of Covid-19 was negatively significant to stock returns. They suggested a risk mitigation strategy by the government and companies.

Najaf, Subramaniam and Atayah (2021) examined Covid-19’s impact on lending, in which findings revealed that the Covid-19 outbreak negatively impacted lending opportunities during this period. Many financial institutions could not offer loans during this period and those with outstanding loans suffered in terms of repayments during this period. Mohammed Saad Al-Mughairi et al. (2021) investigated both social and economic impacts of Covid-19 on tourism and hospitality companies, which revealed that both economic and social variables were negatively impacted by fear, financial loss and depression.

**Discussion of gaps**

From the above review of related literature, it was discovered that there is still limited research relating to the Covid-19 pandemic, corporate sustainability, and company performance. Most of the prior studies are from developed countries and the available ones tend towards stock market performance and not firm-level performance. There has been limited research in the developing countries relating to Covid-19 and the accounting profession. It is these and many more gaps that this study covers. It was also discovered that there are limited empirical studies relating to the Covid-19 pandemic and company sustainability performance from the world literature. Those prior studies are also limited to one sector analysis while the present study covers all sectors according to the
Johannesburg Stock Exchange classification. Lastly, the study also adds to knowledge by providing various ways in which companies can achieve quick recovery from the pandemic shock.

**Company-related Recovery Strategies from the shock of the Covid-19 Pandemic**

Having reviewed much literature related to Accounting, Finance, and other business-related disciplines and suggestions from scholars, the study came up with the following for companies, economies, and nations’ quick recovery strategies from the pandemic. By implication, this added to the body of literature to provide a summary of all suggestions from scholars as regards the quick recovery from shocks of the pandemic.

These recovery strategies are enumerated below:

i. **Efficient corporate governance**: This entails the integration of risk-related control into management control and strong internal control systems into the business operations. It also involves how companies can build resilience and quick recovery strategies for disaster through efficient management by company directors and good governance (Alao and Gbolagade, 2020; Gelter and Puaschander, 2020). Generally, it involves management closely monitoring cash-flows through incoming sales; increasing production in the case of manufacturing companies; as well as timely, proper and quality delivery of services in the case of service companies. Close monitoring of credit sales timing and credit purchases and proper cost control, as well as the reduction of expenditure methods, should also be adopted.

ii. **Technology – Installation of modern-day software**: The pandemic has revealed that any organisation wanting to remain in business nowadays would be technologically sound. Companies need modern-day technological software and must be well digitalised to make them leaders in their industries. Many companies ceased because after various governments introduced total lockdowns, at least for the first six months they could not cope with the situation, especially SMEs (Adejare et al. 2021; Queiroz et al. 2020). Small companies should also look for mini software packages that will be suitable for the size of their companies to remain in business (Meramveliotakis and Manioudis, 2021; Pu et al. 2021; Menon, 2021).

iii. **Cost control and cost reduction methods of cost accounting**: This method is applicable to both company-related recovery strategies and government or economic-related strategies. Companies can approach their bankers to introduce debt re-scheduling methods for them to discuss better ways to pay their debt, especially those that defaulted because of the pandemic. This can be achieved through moratorium extensions that may be given to debtholders during the pandemic for them to re-strategize on repayment methods. Bankers can also reduce or cancel interest due during the pandemic for companies to recover quickly from the shocks. Other means of cost control and reduction measures can be introduced by the management that would not have negative impacts on the employees and production quality (Dube, 2021).

iv. **Strong and modern-day health facilities**: All companies should voluntarily provide a well-equipped clinic with rotational and professional health workers that can tackle health-related issues in an organisation with prompt actions and modern-day health facilities. This is to guard against the easy spread of diseases whenever there is a re-occurrence of a pandemic. This should form part of companies’ listing requirements as this will also form part of future control of pandemics.

v. **Employees’ perceptions**: Companies should really work on the fear of death, mental disorders and job insecurity that the pandemic has created in people’s lives if companies and nations are ready to recover very quickly (Khan et al. 2021).

**Government-Related Recovery Strategies**

**Government policies and laws**

Governments of all nations should make policies and relax policies in favour of companies’ recovery strategies so that they can help companies to recover from the shocks imposed on companies and employees by the pandemic. For instance, Menon (2021) recommended support for SMEs from the government as SMEs control a greater percentage of every economy of all nations. Yearly disaster management plans should also be integrated into all governments’ activities (Arif, Jamal and Subramaniam, 2020). Other monetary policies and fiscal policies should be made in favour of companies and SMEs, at least for the next few years. For instance, both bank interest rates and company tax rates should be reduced. This will help companies to recover as quickly as possible (Hamal and Gautam, 2021).

**Active and prompt decision-making**

Decisions regarding economic recovery after the pandemic should be treated with the utmost priority and should not be delayed. This will save the world from experiencing the global economic depression that has been forecasted by many scholars, as this will be a disaster if it happens. Governments, in their decision-making, should have long-term economic recovery strategies and short-term economic recovery strategies as this will help them to be in total control and to achieve quick recovery from the pandemic.

**Provision of Social infrastructure**

Governments need to provide more health facilities such as well-equipped clinics, public toilets, clean water, etc. for their citizens in every remote area, where people can have free access to the facilities or at any time with affordable resources involved. These will help citizens to live a hygienic life and to prevent future occurrences of the pandemic.

**Education, Monitoring and follow-up**
There must be proper education and orientation to change people’s opinions about vaccinations, especially citizens from local areas that have beliefs that the Covid-19 pandemic is not real. This orientation should involve schools, institutions, companies and SMEs, and must be supported with close monitoring and follow-up. Recently, students from institutions protested in South Africa because of the management strategy toward overall institutions’ compulsory vaccination. There is a need for thorough orientation as this will make the recovery process faster and may block re-occurrence.

Public

For quick recovery from the shocks of the pandemic to be achieved, the public and companies must also help governments by supporting their governments in their various plans for achieving this. Without the support of the people, recovery processes may be very slow.

Easy Access to loan facilities: Governments should create an interest-free and easy access pool to funds that will be available for both SMEs and companies that received direct hits from the pandemic (Najaf, Subramaniam and Atayah, 2021). Governments can also help companies to pay off outstanding loans that have been affected by the pandemic, as a bail-out fund with interest being free when paying back to the government.

Research and Methodology

Data

The dataset for this study was obtained from the annual reports of 40 selected South African listed companies over the period 2010–2020. The dependent variables utilized are company performance as measured by returns on assets (ROA); returns on equity (ROE); and sustainability performance measures such as sales growth (SGT) and net profit margin (NPM). The independent variables included in the study are economic social governance (ESG) represented by corporate social responsibility (CSR), earnings per share (EPS), quick ratio (QR), debt to equity ratio (DER), return on capital employed (ROCE) and share price (SP).

Analysis

Table 1 presents the descriptive statistics and correlation matrix of all the variables under consideration. The statistics indicate there is wide variation and consistency as the data is dispersed around their means.

The average values of company performance measures are 9.876 and 16.762 respectively, whereas the corporate sustainability measures are 9.853 and 12.499 on average. The findings reveal that, amongst the company performance and corporate sustainability indicators, returns on equity and net profit margin of the South African companies are increasing over the sample period. Amongst the independent variables, economic, social governance and quick ratio are observed to have the highest and lowest average values of 42209.7 and 1.029, respectively.

The lower panel of Table 1 reports the correlation analysis of the variables. The correlation analysis reveals no evidence of multicollinearity amongst the variables since the coefficient values of all the variables is less than 0.0803. As expected, the correlation coefficient shows that all the explanatory variables have a positive relationship with both the company's performance and corporate sustainability indicators, whilst the debt-to-equity ratio is negatively related to both company performance and corporate sustainability measures.

Table 1: Summary of descriptive statistics and correlation matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROA</th>
<th>ROE</th>
<th>SGT</th>
<th>NPM</th>
<th>EPS</th>
<th>QR</th>
<th>DER</th>
<th>ROCE</th>
<th>SP</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>33.560</td>
<td>422.650</td>
<td>51.630</td>
<td>235.980</td>
<td>148.490</td>
<td>0.000</td>
<td>117.322</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Max</td>
<td>92.890</td>
<td>117.720</td>
<td>44.810</td>
<td>304.310</td>
<td>130.580</td>
<td>19.910</td>
<td>141.660</td>
<td>211.260</td>
<td>407.500</td>
<td>353.800</td>
</tr>
<tr>
<td>Obs</td>
<td>480</td>
<td>480</td>
<td>480</td>
<td>480</td>
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<td>480</td>
<td>480</td>
<td>480</td>
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<td>480</td>
</tr>
</tbody>
</table>

Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>ROE</th>
<th>SGT</th>
<th>NPM</th>
<th>EPS</th>
<th>QR</th>
<th>DER</th>
<th>ROCE</th>
<th>SP</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ROE</td>
<td>0.630</td>
<td>1.000</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SGT</td>
<td>0.129</td>
<td>0.106</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPM</td>
<td>0.260</td>
<td>0.246</td>
<td>0.010</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EPS</td>
<td>0.401</td>
<td>0.302</td>
<td>0.131</td>
<td>0.357</td>
<td>1.000</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>QR</td>
<td>0.144</td>
<td>0.082</td>
<td>-0.011</td>
<td>0.044</td>
<td>0.187</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DER</td>
<td>-0.152</td>
<td>-0.163</td>
<td>-0.177</td>
<td>-0.004</td>
<td>-0.010</td>
<td>-0.041</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCE</td>
<td>0.169</td>
<td>0.104</td>
<td>0.008</td>
<td>0.043</td>
<td>0.027</td>
<td>0.047</td>
<td>-0.016</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>0.096</td>
<td>0.099</td>
<td>0.076</td>
<td>0.330</td>
<td>0.398</td>
<td>0.170</td>
<td>-0.003</td>
<td>-0.031</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>CSR</td>
<td>0.130</td>
<td>0.113</td>
<td>0.012</td>
<td>0.0370</td>
<td>0.094</td>
<td>0.045</td>
<td>-0.052</td>
<td>0.089</td>
<td>0.003</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Empirical Model

The empirical model for this investigation is formulated as follows:

\[ CPS_{it} = \alpha_i + \beta_1 CG_{it} + \beta_2 X_{it} + \rho Time_{it} + \epsilon_{it} \]

Where \( i = 1, \ldots, N \) represents the cross-section of the selected companies; \( t = 2010, \ldots, 2020 \) denotes the time period; \( \alpha_i \) is the company-specific intercept parameter; \( CPS_{it} \) represents company and sustainability performance indicators including returns on assets, returns on equity, sales growth and net profit margin; \( CG_{it} \) is corporate social governance; \( X_{it} \) represents the other control variables; \( \beta_1 \) and \( \rho \) are the model parameters; and \( \epsilon_{it} \) is the error term. To investigate the effect of corporate social governance on company and sustainability performance, the fully modified ordinary least square (FMOLS) and dynamic ordinary least square (DOLS) are utilized for this study. For some reason, the application of these technique is preferable amongst the other panel co-integration techniques. The fully modified ordinary least square (FMOLS) is a non-parametric technique advanced by Phillips and Hansen (1990) and Pedroni (2001). The FMOLS is a residual-based test that provides efficient results for co-integrated variables and eliminates the problems of endogeneity and serial correlations amongst the variables. Hence, the panel FMOLS can be specified as follows:

\[ \hat{\beta}_{FMOLS} = \frac{1}{N} \sum_{i=1}^{N} \left( \sum_{t=1}^{T} \left( x_{it} - \bar{x} \right)^2 \right)^{-1} \left( \sum_{t=1}^{T} \left( x_{it} - \bar{x} \right) y_{it}^* - T \gamma \right) \]

Where \( x_{it} \) and \( y_{it} \) are assumed to be variables that are cointegrated with slope \( \beta_i \) in order to account for the individual specific effect. \( \gamma \) corrects the serial correlation term due to the heterogeneity dynamics and \( y_{it}^* \) is the transformed variable of \( y_{it} \) to circumvent the endogeneity problem. Correspondingly, dynamic ordinary least square (DOLS) is a parametric approach introduced by Kao and Chiang (2001) that provides a consistent long-run estimation while taking into consideration the problems of endogeneity and serial correlation issues. This approach addresses the issue of autocorrelation by adding the first lag differences to the model. Thus, the panel DOLS model can be expressed as follows:

\[ y_{it} = \alpha_i + x_{it} \beta + \sum_{j=-p}^{p} c_{ij} \Delta x_{it-j} + \epsilon_{it} \]

Where \( y_{it} \) is the dependent variable with an integrated order of one for all the cross-sections; \( \alpha_i \) denotes the industry-specific effects; \( x_{it} \) is the independent variables with an integrated order of one; \( \beta \) represents the co-integration vector; and \( c_{ij} \) is the coefficient of a lagged of first difference independent variables; and \( \epsilon_{it} \) is the error term.

Empirical Results

The first step in the estimation of the series is to check the order of integration of the variables using the Levin, Lin and Chu (2000) and Im, Pesaran, and Shin (2003) panel unit root tests. Table 2 presents the results of the panel unit root tests. As shown in Table 2, the results indicate that all the variables contain unit root process, i.e., they are not stationary at levels. However, all the variables become stationary at the first difference, suggesting that the variables are integrated of order one I (1).

<table>
<thead>
<tr>
<th>Table 2: Panel unit root tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Level</td>
</tr>
<tr>
<td>ROA</td>
</tr>
<tr>
<td>ROE</td>
</tr>
<tr>
<td>SGRT</td>
</tr>
<tr>
<td>NPM</td>
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<tr>
<td>EPS</td>
</tr>
<tr>
<td>QR</td>
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<tr>
<td>DER</td>
</tr>
<tr>
<td>ROCE</td>
</tr>
<tr>
<td>SP</td>
</tr>
<tr>
<td>CSR</td>
</tr>
</tbody>
</table>

Note: *** and * indicate significance at 1%, 5%, and 10%. All the variables are expressed in log form

We proceed further to determine whether there is the existence of a long-run co-integration relationship between the variables under consideration using the Pedroni (1999) and Kao (1999) panel co-integration tests. Table 3 illustrates the Kao co-integration results using different measures of company performance and sustainability performance as dependent variables. The results reveal that the

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1 Due to space conservation, the results of the Pedroni (1999) test are not presented in this paper but are available from the authors upon request.
null hypothesis of no long-run equilibrium is rejected, indicating that there exists a long-run co-integration relationship amongst the variables.

**Table 3: Kao Residual Panel Co-integration results**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>t-statistics</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>-6.095***</td>
<td>0.000</td>
</tr>
<tr>
<td>ROE</td>
<td>-5.245**</td>
<td>0.027</td>
</tr>
<tr>
<td>SGT</td>
<td>-4.822***</td>
<td>0.001</td>
</tr>
<tr>
<td>NPM</td>
<td>-3.956**</td>
<td>0.042</td>
</tr>
</tbody>
</table>

Note: ***, **, and * indicate significance at 1%, 5%, and 10% respectively.

Having confirmed the existence of long-run co-integration amongst the variables, the long-run estimation effect of economic and social governance on company performance and corporate sustainability is considered. Tables 4 and 5 present the results of FMOLS and DOLS for each company’s performance and corporate sustainability indicators. Table 4 illustrates the company’s performance outcomes, with ROA and ROE as the dependent variables. Table 5 presents the corporate sustainability outcomes, with SGT and NPM as the dependent variables. The results show that the coefficient of earnings per share is positive and statistically significant for both company performance and corporate sustainability. This finding implies that an increase in earnings per share due to rising retained profits improves the company performance and corporate sustainability of South African companies. The result aligns with the findings of Sutopo et al. (2018), who posit that investors react positively to earnings per share as relevant accounting information in stock valuation, which consequently improves the firm’s performance. The results also show that the coefficient of quick ratio is positively significant for both company performance and corporate sustainability, except for the sale growth indicator that reports an insignificant result. The result is an indication that an increase in the quick ratio contributes to the liquidity position of the company, which in turn accelerates the company’s performance and corporate sustainability in industries in South Africa. This result also shows the ability of companies in South Africa to meet their short-term liabilities to their short-term creditors. The result is consistent with the findings of Fonseka et al. (2012), Abbasi and Malik (2015), Ale (2018) and Ali et al. (2019).

Conversely, the results show that the coefficient of debt-to-equity ratio is negative and statistically significant for both performance and sustainability indicators, but a positively insignificant finding is reported for net profit margin. The results imply that companies with an increasing level of debt equity ratio might experience changes in the management’s opportunity-seeking behaviour and their decision-making, which can consequently diminish the company’s performance and corporate sustainability. The result is in line with the works of Waddock and Graves (1997), Welling and Webb (2009), Barnett and Salomon (2012) and Borhan et al (2013). Moreover, the results show that the coefficients of return on capital employed are positive and significant for both corporate performance and corporate sustainability indicators.

The findings also indicate that companies with efficient capital investment and those able to effectively allocate their capital will experience growth in their company performance and corporate sustainability. Furthermore, the results show that the coefficient of share price is positively associated with company performance and corporate sustainability outcomes. This finding implies that companies that engage in corporate social responsibility activities will have higher share or stock prices, which will improve their reputation and, as a result, their performance and corporate sustainability. Similarly, the results show that the coefficient of corporate social governance is positive and statistically significant for both company performance and corporate sustainability indicators.

The findings also reveal that an increase in the corporate social governance activities of companies in South Africa provides a competitive advantage and improves their service quality, which thus contributes to the growth of their company performance and corporate sustainability.

**Table 4: Panel DOLS and FMOLS estimation results**

<table>
<thead>
<tr>
<th>Dependent variable: ROA</th>
<th>DOLS</th>
<th>FMOLS</th>
<th>Dependent variable: ROE</th>
<th>DOLS</th>
<th>FMOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>0.476 (0.000)***</td>
<td>0.335 (0.000)***</td>
<td>0.685 (0.000)***</td>
<td>0.487 (0.000)***</td>
<td></td>
</tr>
<tr>
<td>QR</td>
<td>1.693 (0.057)***</td>
<td>1.897 (0.024)***</td>
<td>0.272 (0.091)*</td>
<td>0.867 (0.055)***</td>
<td></td>
</tr>
<tr>
<td>DER</td>
<td>-0.427 (0.045)***</td>
<td>-0.382 (0.008)***</td>
<td>-0.345 (0.038)***</td>
<td>-0.569 (0.017)***</td>
<td></td>
</tr>
<tr>
<td>ROCE</td>
<td>0.147 (0.000)***</td>
<td>0.042 (0.018)***</td>
<td>0.739 (0.012)***</td>
<td>0.060 (0.052)**</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>0.704 (0.025)***</td>
<td>0.418 (0.010)***</td>
<td>0.520 (0.016)***</td>
<td>0.511 (0.000)***</td>
<td></td>
</tr>
<tr>
<td>CSR</td>
<td>1.706 (0.049)***</td>
<td>1.636 (0.002)***</td>
<td>0.365 (0.012)***</td>
<td>0.326 (0.027)***</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***, **, and * indicate significance at 1%, 5% and 10% respectively.
The research empirically examined the impact of the pandemic on companies’ performance and corporate sustainability. The study was subjected to four different dependent variables, namely: Returns on Assets, Returns on Equity, Sales Growth and Net Present Value. Under the four scenarios, it was only the Debt-to-Equity ratio that revealed an inverse relationship with the four dependent variables. Other variables are positively and significantly related to different dependent variables under different scenarios. It is consistent with the findings of Fonseka et al. (2012); Abbasi and Malik (2015); Ale (2018); and Ali et al. (2019).

Conversely, the results show that the coefficient of debt-to-equity ratio is negative and statistically significant for both performance and sustainability indicators. By implication, this shows that the Covid-19 pandemic has a huge impact on the capital structure of the selected companies, which could be because of the reduction in the liquidity strength of those companies during the pandemic. This may force the company management to go into borrowing which could increase the borrowing cost, gearing ratio or total expenses of companies during the pandemic. By implication, it causes reduction in the overall profit of the companies and increment in the overall expenses. Additionally, the result implies that companies with an increasing level of debt equity ratio might experience changes in management opportunity-seeking behaviour and their decision-making, which can consequently diminish the company’s performance and corporate sustainability. The result is in line with the works of Waddock and Graves (1997), Welling and Webb (2009), Barnett and Salomon (2012) and Borhan et al. (2013). The result shows that the coefficients of return on capital employed are positive and significant for both corporate performance and corporate sustainability indicators. The findings indicate that companies with efficient capital investment and those able to effectively allocate their capital will experience growth in their company performance and corporate sustainability.

Furthermore, the results show that the coefficient of share price is positively associated with company performance and corporate sustainability outcomes. The findings imply that companies that engage in corporate social responsibility, economic and environmental governance activities will have higher share or stock prices, which will improve their reputation and, as a result, their performance and corporate sustainability. Similarly, the results show that the coefficient of corporate social governance is positive and statistically significant for both company performance and corporate sustainability indicators. Moreover, the findings reveal that an increase in the corporate social governance activities of companies in South Africa provides competitive advantages and improves their service quality, which thus contributes to the growth of their company performance and corporate sustainability. However, expenses on Covid-19 aspects of social governance have an adverse impact on companies’ performance and sustainability performance.

### Conclusion

The study empirically examined the impact of the pandemic on companies’ performance and corporate sustainability. The results show that the coefficient of earnings per share are positively and statistically significant to both company performance and corporate sustainability. By implication, this finding can be interpreted in diverse ways: that an increase in earnings per share due to rising retained profits improves the company performance and corporate sustainability of South African companies. The results align with the findings of Sutopo et al. (2018), who posit that investors react positively to earnings per share as relevant accounting information in stock valuation, which consequently improves the firm’s performance. The finding may also imply that recent spending on Covid-19 has greatly affected company performance, and that companies’ spending on Covid-19 and other socially related expenses can destroy the value created and may have a negative impact on the value sustainability of companies over years if not curtailed or controlled. Apart from value destruction, results from EPS can also imply that the Covid-19 pandemic greatly affected shareholders’ value creation and sustainability, thereby leading to investors’ divestment. The results also show that the coefficient of quick ratio is positively significant for both company performance and corporate sustainability. By implication, the results from sampled companies revealed that most of the liquidity of those companies has been greatly affected. The general norm or the least ratio for an acid test ratio/quick ratio is 1:1 while that of the current ratio is 2:1 for companies that are considered financially stable. The significance and positive result of this ratio revealed how importance liquidity is to companies. This result revealed that Covid-19 and other social expenses seriously affected companies during the pandemic period as most of these companies’ quick ratios fall below the set control standard ratio. However, the general result is an indication that an increase in the quick ratio contributes to the liquidity position of the company, which in turn accelerates the company’s performance and corporate sustainability in industries in South Africa. This result also shows that the ability of companies in South Africa to meet their short-term liabilities to their short-term creditors diminished during the pandemic period. Meanwhile, the ratio picked up shortly after the pandemic. The result is consistent with the findings of Fonseka et al. (2012); Abbasi and Malik (2015); Ale (2018); and Ali et al. (2019).

### Implications

The study empirically examined the impact of pandemic on both corporates’ sustainability and companies’ performances. The results show that the coefficient of earnings per share are positively and statistically significant to both company performance and corporate sustainability. By implication, this finding can be interpreted in diverse ways: that an increase in earnings per share due to rising retained profits improves the company performance and corporate sustainability of South African companies. The results align with the findings of Sutopo et al. (2018), who posit that investors react positively to earnings per share as relevant accounting information in stock valuation, which consequently improves the firm’s performance. The finding may also imply that recent spending on Covid-19 has greatly affected company performance, and that companies’ spending on Covid-19 and other socially related expenses can destroy the value created and may have a negative impact on the value sustainability of companies over years if not curtailed or controlled. Apart from value destruction, results from EPS can also imply that the Covid-19 pandemic greatly affected shareholders’ value creation and sustainability, thereby leading to investors’ divestment. The results also show that the coefficient of quick ratio is positively significant for both company performance and corporate sustainability. By implication, the results from sampled companies revealed that most of the liquidity of those companies has been greatly affected. The general norm or the least ratio for an acid test ratio/quick ratio is 1:1 while that of the current ratio is 2:1 for companies that are considered financially stable. The significance and positive result of this ratio revealed how importance liquidity is to companies. This result revealed that Covid-19 and other social expenses seriously affected companies during the pandemic period as most of these companies’ quick ratios fall below the set control standard ratio. However, the general result is an indication that an increase in the quick ratio contributes to the liquidity position of the company, which in turn accelerates the company’s performance and corporate sustainability in industries in South Africa. This result also shows that the ability of companies in South Africa to meet their short-term liabilities to their short-term creditors diminished during the pandemic period. Meanwhile, the ratio picked up shortly after the pandemic. The result is consistent with the findings of Fonseka et al. (2012); Abbasi and Malik (2015); Ale (2018); and Ali et al. (2019).

Conversely, the results show that the coefficient of debt-to-equity ratio is negative and statistically significant for both performance and sustainability indicators. By implication, this shows that the Covid-19 pandemic has a huge impact on the capital structure of the selected companies, which could be because of the reduction in the liquidity strength of those companies during the pandemic. This may force the company management to go into borrowing which could increase the borrowing cost, gearing ratio or total expenses of companies during the pandemic. By implication, it causes reduction in the overall profit of the companies and increment in the overall expenses. Additionally, the result implies that companies with an increasing level of debt equity ratio might experience changes in management opportunity-seeking behaviour and their decision-making, which can consequently diminish the company’s performance and corporate sustainability. The result is in line with the works of Waddock and Graves (1997), Welling and Webb (2009), Barnett and Salomon (2012) and Borhan et al. (2013). The result shows that the coefficients of return on capital employed are positive and significant for both corporate performance and corporate sustainability indicators. The findings indicate that companies with efficient capital investment and those able to effectively allocate their capital will experience growth in their company performance and corporate sustainability. Furthermore, the results show that the coefficient of share price is positively associated with company performance and corporate sustainability outcomes. The findings imply that companies that engage in corporate social responsibility, economic and environmental governance activities will have higher share or stock prices, which will improve their reputation and, as a result, their performance and corporate sustainability. Similarly, the results show that the coefficient of corporate social governance is positive and statistically significant for both company performance and corporate sustainability indicators. Moreover, the findings reveal that an increase in the corporate social governance activities of companies in South Africa provides competitive advantages and improves their service quality, which thus contributes to the growth of their company performance and corporate sustainability. However, expenses on Covid-19 aspects of social governance have an adverse impact on companies’ performance and sustainability performance.
therefore concluded that companies in South Africa saw their debt structures increase during the pandemic period, which greatly affected companies’ ROA, ROE, sale growth and profit, especially in the year 2020 when the pandemic was severe. However, the impact was not significant on companies with strong liquidity backing and because of the number of years under review. Therefore, the impact of Covid-19 pandemic was so sensitive on South African companies and companies must pay strong attention on recovery strategy suggested to reduce the severity of the impact on them. Other part of this study was based on the recovery strategies of companies immediately after the Covid-19 pandemic. It was discovered that the effect of the Omicron variant of the Covid-19 pandemic was not as severe as the original Covid-19 pandemic. This is because companies and government had already used the control strategy of Covid-19, which made the control of Omicron easy, thus the adaptation was easier for them compared to when the Covid-19 pandemic suddenly began. Presently, the impact of Omicron is not as severe as expected. This makes the recovery strategy in South Africa easier than expected. For this study, the control and recovery strategy has been grouped into two, namely: company-related recovery strategy and government-related recovery strategy, which to the best of the researcher’s knowledge will help companies and countries to recover quickly and will help to reduce the negative impact of Covid on companies, which will in turn help the nation’s economy. Lastly, it is believed that these strategies will prevent future recurrence.

Acknowledgement

Author Contributions: Conceptualization, AB., GF.; Methodology, AB., GF.; Data Collection, AB., GF.; Formal Analysis, AB., GF.; Writing—Original Draft Preparation, AB., GF.; Writing—Review And Editing, AB., GF. All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

References


Benson & Fortune (2021). After the initial Omicron wave, the spread of Omicron is reduced. However, a new strain of the virus is spreading rapidly, which is called the Omicron. This makes the recovery of Omicron easy, which to the best of the researcher’s knowledge will help companies and countries to recover quickly and will help to reduce the negative impact of Omicron on companies, which will in turn help the nation’s economy. Lastly, it is believed that these strategies will prevent future recurrence.


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Methodology: AB., GF.; Data Collection: AB., GF.; Formal Analysis: AB., GF.; Writing—Original Draft Preparation: AB., GF.; Writing—Review And Editing: AB., GF. All authors have read and agreed to the published the final version of the manuscript.

References


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