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Abstract:

COVID-19 pandemic has been highly detrimental to both the overall economy and the financial performances of firms in all sectors. It has placed increased pressure on the manufacturing capacity and supply chains throughout the world, but it has also provided new opportunities for the logistics industry to make advancements in ecommerce. This study analyses the financial performance of 130 Saudi firms that listed on the Saudi Stock Exchange in order to explore those dynamics which belong to the following sectors (energy, material, industrials, consumer discretionary, communication services, consumer staples, healthcare, financial, information technology and utilities). To facilitate comparison between several ratios in 2019 and 2020, the Wilcoxon Signed Rank test was conducted. This study determined that there was no improvement to any of the 130 listed firms in the sample during this time, which is reassuring for businesses in Saudi Arabia, as over the same period, the Saudi Economy shrunk. These findings are useful for businesses to plan for Covid-19 like disruptions in the future.

Keywords: COVID-19 Pandemic; Financial Performance; Saudi Firms.

الملخص:

لقد كانت جائحة COVID-19 حدثاً مهماً جداً على كل من الاقتصاد الكلي والأداء المالي للشركات في جميع القطاعات. ولقد فرضت ضغوطاً متزايدة على القدرة التصنيعية وسلاسل التوريد في جميع أنحاء العالم، ولكنها قدمت أيضاً فرصاً جديدة لصناعة الخدمات اللوجستية لإحداث تقدم في التجارة الإلكترونية. هذه الدراسة تحلل الأداء المالي لـ 130 شركة سعودية مدرجة في سوق الأوراق المالية من أجل استكشاف الديناميكيات التي تنتهي إليها هذه القطاعات (الطاقة، المواد، الصناعات، تقدير المستهلك، خدمات الاتصالات، السلع الاستهلاكية، الرعاية الصحية، المالية، تكنولوجيا المعلومات والمرافق). ولتسهيل المقارنة بين نسبتين هما في 2019 م و 2020 م، تم إجراء اختبار Wilcoxon Signed Rank. وقد توصلت هذه الدراسة إلى عدم وجود تحسن في أي من الشركات المدرجة في العينة البالغ عددها 130 شركة خلال هذا الوقت، وهو أمر مطمئن للشركات في السعودية حيث تقلص الاقتصاد السعودي خلال هذه الفترة وان هذه النتائج تعتبر مفيدة للشركات للتخطيط لاضطرابات مثل جائحة COVID-19.

الكلمات المفتاحية: جائحة كورونا 19؛ الأداء المالي؛ الشركات السعودية.

1. Introduction

1.1 Background to the Pandemic

Modern-day businesses operate in a dynamic environment where there are constant developments in the environment that pose new challenges for the business. Whilst businesses develop plans to respond to such challenges, at times the challenge could be “severely disruptive” in nature (Lin et al., 2021). One such challenge was COVID-19 pandemic that disrupted the entire world in a short period (Shen et al., 2020).

On 31st December 2019, the World Health Organization (WHO) received an alert from the Chinese health authorities about pneumonia of unknown origin in Wuhan, China (Mohan & Nambiar, 2020). By 7th January 2020, the virus was isolated and the WHO temporarily named it as 2019 novel corona virus (2019) (Lin et al., 2021). According to Shen et al. (2020), on 11th January, the first death occurred from it in China and the WHO declared it to be a Public Health Emergency of International Concern as it was highly contagious, caused infections at a large scale, and was difficult to contain. The large-scale infections overwhelmed health systems and to halt the spread of the virus, many countries implemented lockdown measures (Jahangir et al., 2020). According to Jahangir et al. (2020), the lockdowns were justified considering that prior corona virus infections in the last two decades, Severe Acute Respiratory Syndrome (SARS-COV) and the Middle East respiratory syndrome (MERSCOV) resulted in pneumonia and had high fatality rates. Thus, based on lessons from managing similar diseases in the past, lockdowns were implemented where only the essential services were operational (Alsamhi et al., 2022).

Due to lockdowns and social distancing norms to reduce COVID-19 pandemic, whilst the pressure was reduced on the health system, however, several businesses were impacted due to restricted movement. Whilst governments globally encouraged people to work from home by using online technologies, however, not all roles could be performed online. As a result, whilst all industries were impacted by the pandemic, some (including tourism, aviation, and hospitality) were impacted severely (Xu et al., 2021). The cascading severity can be explained using the following example. Consider a tourist destination that was under lockdown: mediums of transportation (airlines, buses, trains, etc.) were not working, shopping centers were not operational, hotels and restaurants were not operational, and events and associated business were not operational. These are some directly impacted industries. Also, industries like banks, FMCG, and IT services were impacted as they were supporting the tourism sector. The reduced client requirements for services industries forced them to reduce their costs and let go of people, which increased the severity of the crisis as people had lower money to spend on activities like tourism, even when the lockdown and other restrictions were lifted. Thus, what started as a health crisis evolved into an economic crisis as well (Wu et al., 2021). As of 15th July 2022, there have been over 6.35 million deaths reported worldwide with estimations of the actual number being much higher as many countries are considered to have underreported deaths (WHO, 2022). According to the World Bank (2020), the global GDP contracted by 5.2% in 2020, and the economic impact was not uniform across all countries.

The above example showed that the impact of the pandemic was not uniform across countries and industries. Therefore, there is a need to examine the “Impact of Pandemic on Saudi Businesses” because Saudi has an important place in the world economy due to several economies being dependent on Saudi Energy.

1.2 Importance of Saudi Energy to the World

For the Saudi economy, the energy sector serves as its economic backbone as with 15% of the world’s proved oil reserves, the country is the world’s largest producer (approximately 12 million barrels per day) and the largest exporter of oil (approximately 70% of total exports), which accounts for 53% of government revenue. Since 2015, the production use of natural gas is also increasing, which is replacing crude oil usage globally (EIA, 2021). Conventionally, it is considered that the availability of oil and gas has served a key role in establishing a cordial relationship for Saudi Arab with other countries globally that are heavily dependent on oil and gas from Saudi Arabia. Also, the money from the oil and gas business is being utilized for development in other sectors including banking, real estate, tourism, and others (Bahgat, 2013). Since 2016, as part of its National Vision 2030, the country is reducing its economic dependency on oil and gas and is exploring renewable sources of energy and also investing heavily in other sectors; however, oil and gas energy still drives the country’s economy (EIA, 2021).

1.3 Saudi Government’s Response to the Pandemic

Saudi Arabia had to face the impact of the pandemic on two fronts: reduced supply capabilities and reduced global demand for oil and gas. The first COVID-19 case was reported in the country in March 2020 and within 34 days, over 2,400 people were infected. The country’s government imposed strict lockdowns by encouraging remote working and advising businesses to allow only essential people at the office location. These strict measures ensured that the virus did not spread much (Alrashed et al., 2020). However, due to reduced global mobility, the demand for fuel was reduced. This led to a problem of excess production, so OPEC (The Organization of the Petroleum Exporting Countries) reduced production to reduce oil inventory levels and stabilize oil prices. The country reduced its production by 3.1 million barrels in a day from April 2020 to February 2021, when it gradually started increasing production and the demand for fuel increased (EIA, 2021).

Whilst the country's economy contracted by 4.1% in 2020 primarily due to reduced oil demand, overall, the Saudi Government can be considered to have responded well to the pandemic (Alrashed et al., 2020).

1.4 Study Objective

With the foundation of the effects of the pandemic on different nations and enterprises, this study will endeavor to investigate how the financial performances of different Saudi Arabian firms have been impacted. This will be done by understanding how various financial parameters across industries in Saudi Arabia varied over the period 2019–2020 and conducting statistical tests to draw insights.

2. Background Review

Before conducting an empirical study, it is necessary to review existing literature to identify gaps in the area and develop a theoretical framework to guide the study.

2.1 Impact of Pandemic on Various Economies

As mentioned earlier, what was initially a health crisis snowballed into an economic crisis with different levels of severity observed across various countries. The response adopted by most countries was lockdown which, whilst necessary to curb the spread of the pandemic, also led to an economic shock (Alsamhi et al., 2022). The impact of the pandemic was felt on both the supply and demand sides of an economy: Due to lockdowns and personal decisions of employees to not come to the workplace, there was a dramatic reduction in the volume of production of goods and services. At the same time, reduced earnings, job losses, and uncertainty led to a dramatic decrease in consumption, especially in the early part of the pandemic (Soyres et al., 2022).

As mentioned earlier, the economic impact of the pandemic varied across countries and industries. According to Dey-Chowdhury et al. (2021), the UK was the worst impacted country amongst G7 members (Canada, France, Germany, Italy, Japan, UK, and USA). Thus, if a country has businesses that require face-to-face interactions (for example tourism), the severity of the pandemic was high, as the structural composition of an economy plays a key role in determining the economic impact of the pandemic. According to Soyres et al. (2022), in advanced economies, service consumption fell dramatically and started recovering slowly once the restrictions were lifted and vaccines were widely available. On the contrary, consumption of goods reduced marginally and had a strong recovery. Dey-Chowdhury et al. (2021) added that whilst regular government expenditures decreased in all countries, however, government spending increased in providing fiscal stimulus and spending on the healthcare system. According to Dey-Chowdhury et al. (2021), the drop in household consumption resulted in economic contraction to a large extent amongst the G7 countries. Household consumption besides being a function of earnings is also dependent on the strictness of movement: Amongst the G7 countries, UK had the longest and strictest lockdown that could have a significant role in reduced household consumption and reduced GDP (Dey-Chowdhury et al., 2021).

Karim et al. (2021), using the example of Bangladesh's economy, highlighted that prior to the pandemic too, the banks in the country were not doing well and suffered from liquidity risks. With the pandemic, the businesses faced difficulties in repaying loans and as a result, non-performing loans increased, which further impacted the financial health of banks. However, the conditions did not worsen as there was low demand for new loans due to limited activities across the economy.

Shen et al. (2020), using the example of China, identified that there was a considerable negative impact on the stock markets in the initial phases of the pandemic. Also due to lockdowns, many businesses were not operational, thereby causing a raw material shortage in many sectors. In China, all sectors were impacted as goodwill impairment was introduced by businesses. Also as argued by Xu et al. (2021), there was a significant negative effect on import and export cargo throughputs, thereby impacting the logistics and shipping sectors and impacting the international markets too.

In the Indian context, as identified by Goswami et al. (2021), tourism, aviation, auto, and transportation were severely impacted by the pandemic. This could be attributed to the fact that there was a strict lockdown imposed in the country that disrupted lives at large, especially the industries that employed daily wage earners who were let go and had to travel 1000s of kilometers without proper transportation (Goswami et al., 2021)

The above discussion infers that the impact of the pandemic was not confined to a particular country or industry. All industries suffered due to disruption in demand and supply. For many businesses, this disruption required that the production of goods and services is adjusted accordingly; however, considering the restrictions, production had to be halted at times and at other times there was a depletion of inventories. Therefore, for any study on the topic, there is a need to narrow it down to become more country/industry specific to get useful insights.

2.2 Literature Review & Hypotheses Development

A substantial body of research has been compiled on the impact of COVID-19 pandemic on the financial performances of firms throughout the world. This paper references some of the most prominent works. Hadiwardovo (2020) conducted qualitative analysis of enterprises 'pandemic-era financial performances and found

that crowd-dependent sectors experienced the worst effects. Examples of such sectors include tourism and businesses linked to the tourist industry such as hotels and mass transit, and tertiary product companies with sales being led by credit institutions, property, and public savings funds. Levels of business activity also dropped significantly in the energy industry, placing the sector under extreme pressure.

A variety of other industries have also been impacted in different ways by the pandemic. Industries such as product delivery service providers, internet providers and cellular operators, emergency credit providers, and health insurance were afforded an opportunity to capitalize on the restrictions placed on society during COVID-19 pandemic. In the health sector, companies were able to profit from pandemic-related products including masks, hand sanitizers, disinfectants, and soaps. According to Al-Mansour and Al-Majmi (2020), whilst the food industry maintained stability throughout the pandemic, businesses had to modify their approaches in relation to ordering, payment, and delivery. Due to its qualitative nature, the data available from the Hadiwardovo (2020) study is limited.

A number of researchers have reported that the financial performance of Chinese enterprises was severely negatively impacted by COVID-19 pandemic (Shen et al., 2020; Rababah et al., 2020). The cause of this was determined to be a drop in total revenue which had a knock-on effect on the ROA. A general consensus amongst the researchers was that in the first quarter of 2020, some of the sectors most badly impacted were catering, transportation, and tourism, with the production, operations, and sales departments experiencing the greatest decline. According to Rababah et al. (2020), COVID-19 pandemic was most detrimental to small and medium-sized enterprises. They further maintained that the most significantly affected sectors and areas experienced the greatest deterioration in financial performance. Shaik (2021) reported comparable outcomes in a Saudi Arabia-based study.

Devi et al. (2020) investigated how the financial performances of Indonesian listed companies were impacted by COVID-19 pandemic. They found that during this time, for public firms, the leverage and short-term activity ratios increased while the liquidity and profitability ratios decreased. Additionally, the liquidity and leverage ratios remained relatively unchanged. However, comparisons of the periods before and during the pandemic showed that the profitability and short-term activity ratios of state firms differed significantly. In the consumer goods sector, the liquidity, profitability, and short-term activity ratios all increased, but the leverage ratio decreased. Conversely, the liquidity and profitability ratios of the real estate and property, construction, trade, finance, services, and investment sectors decreased. Khatib and Nour (2021) drew similar conclusions in their Malaysian-based research.

Other studies were performed to investigate and assess the impact of COVID-19 pandemic on a variety of sectors, focusing particularly on firms' financial performance. Research examining logistics and supply chains generally focused on the sectors' viability (Van Hoek, 2020; Ali et al., 2021), but there has been minimal evaluation of how logistics companies' financial performance was affected. Actually, the first attempt at exploratory research on this topic in this sector was carried out by Atayah et al. (2021) in their study of G20 countries. They found that logistics firms' financial performance was significantly better during 2020. Overall, the country-based findings and the primary results concurred, and they reported that 14 of the 20 countries' logistics firms experienced substantial increases during the pandemic. Germany, Korea, Mexico, Russia, Saudi Arabia, and the UK were the six countries that experienced a decline in the financial performance of logistics companies during this period. This is in line with the second theory.

Essentially, a company's financial performance is an indicator of its success in relation to a variety of factors including revenue and operating costs, assets, investment returns, and debt structure. Any changes in the financial performance of an enterprise will garner the attention of the stakeholders. Such changes could involve cash flow, financial position, and profit or loss. Hence, all talks surrounding financial performance encompass more than one period. The basis of acquiring relevant information and evaluating financial performance for both internal and external stakeholders is the analysis of the firms' financial statements. Essentially, this encompasses analyzing the financial data contained in the financial reports. According to Fraser and Ormiston (2016), there are four financial ratios that provide an insight into the firms' level of success: (i) Liquidity ratio, which indicates the capacity of the company to meet the short-term liabilities (its debt); (ii) Solvency ratio, which indicates the amount of company assets that are financed by debt (its leverage); (iii) Activity ratio, which indicates the capacity of the company to produce profits; (iv) Profitability ratio, which indicates the capacity of the company to produce profits.

In addition to indicating the capacity of the company to produce profits, the profitability ratio is also a measure of its efficiency. The three most commonly employed profitability ratios are: (i) Return on Assets (ROA); (ii) Return on Equity (ROE); (iii) Return on Sales (ROS). They inform about the asset equity and revenue productivity in terms of generating profit. Moreover, the future capacity of the company to produce profits can be ascertained through future projections of these ratios.

As per Fraser and Ormiston (2016), the receivable turnover ratio is the short-term activity ratio as it is employed to examine the working capital as it analyses how quickly a firms' receivables transform into cash. A higher receivable turnover correlates to higher cash receivables and consequently, higher profits for the firm. Conversely, as highlighted by Notta and Vlachvei (2014), slower receivable turnover equates to lower profitability.

The capacity of an enterprise to pay its liabilities falling due within one year is given by the liquidity ratio. A predominant liquidity ratio is the current ratio, which offers a comparison between current assets and current debt. Firm management will evaluate the firms' performance in terms of the profits produced via operational activity, wherein a high value current ratio is preferable. However, an excessively high value indicates the underutilization of funds, meaning that profits are not being optimized, which is obviously not a favorable scenario. The current ratio can indicate the ability of a firms' liquidity to employ its assets to cover its liabilities in the short-term, which ensures the long-term sustainability of the firm.

The leverage ratio gauges the firms' ability to meet all of its obligations. The debt-to-equity ratio (LEV) facilitates this measurement. This ratio reports the capital structure, which is comprised of debt and equity. The solvency ratio shows the funds required to meet all or part of the obligations. This ratio establishes the firms' ability to clear both short and long-term debt. Creditors, particularly long-term creditors, pay a great deal of attention to this ratio. A smaller LEV value indicates a better firm state. Under ideal circumstances, the firms' total capital should exceed its total debt.

During the financial crisis, along with interest costs increasing, the purchasing power of people decreased, which caused massive reductions to net income. Consequently, the profitability of a company also decreased dramatically. Declining people's purchasing power directly affects the overall sales of a company. When sales levels drop, profits are reduced. This is also the case if the company is unable to decrease operating costs. Istiningrum(2005) used returns on assets (ROA) to report huge variations in the profitability ratios of service firms in the post-financial crisis periods and highlighted that the average ratio decreased. Rofiqoh(2001) examined the financial performance of public firms listed on the Jakarta Stock Exchange and found that it worsened in all sectors during the financial crisis, particularly in relation to the ability to generate profits, as evidenced by a substantial decrease in ROA. Additionally, Shen et al. (2020) concluded that COVID-19 pandemic was highly detrimental to the performance of listed Chinese firms, which is attributed to a reduction in the total revenue, thereby impacting decreasing ROA. Accordingly, the first hypothesis is put forward as follows:

H1: The COVID-19 pandemic is detrimental to profitability.

It is highly probable that the economic downturn will affect the financial performance of the industrial sector. A consequence of COVID-19 pandemic was the reduction in economic growth, which created an economic crisis that negatively affected peoples' purchasing power. Consequently, there are numerous non-collectible client receivables, which has harmed the cash flow in the firms. However, as the economy further declined, there was an accumulation of supplies. Calculating the liquidity ratio utilizing the current ratio produces a higher liquidity ratio, which is an unfavorable indicator. In the body of research, investigations of how an economic downturn impacts the current ratio have returned varied results. Bintang et al. (2019) included the current ration when drawing comparisons between the periods before and after the financial crisis. Employing the current ration, Istiningrum(2005) reported a significant decrease in the liquidity ratios of the company during the financial crisis. Based on this, the third hypothesis is proposed:

H2: COVID-19 pandemic is detrimental to liquidity.

During a crisis period, a steep decline in sales will affect the cash income from cash sales transactions and the company profits. The resulting lack of cash availability means that the capacity of the company to meet its obligations will be severely negatively affected. Furthermore, the lower sales will cause company losses, and consequently, there will be a reduction in capital worth. It is unavoidable that low sales revenue will decrease the firm's ability to meet all operating expenses, which will ultimately result in the firm losing money. As per Istiningrum (2005), the leverage ratio (measured using the debt-to-equity ratio (LEV)) is adversely impacted by the global crisis. Rofiqoh (2001) asserts that in comparison to the pre-crisis period, higher LEV during the crisis indicates a decline in public companies' financial performance. Hakim (2012) maintains that there were massive fluctuations in the LEV vales during and after the crisis. Moreover, the LEV value could increase if investors or management decrease the capital structure (equity) due to concerns about how the enterprises' profitability is impacted by the crisis, as shareholders consider this particularly risky. Moreover, a decrease in the capital structure (equity) provided by investors or management can also cause operating efficiency and effectiveness to decrease, which is detrimental to the overall performance of the firm. Accordingly, the fourth hypothesis is put forward as follows:

H3: COVID-19 pandemic is detrimental to leverage.

COVID-19 pandemic and resultant economic crisis has proven highly detrimental to profitability, particularly in the transport and tourism industries. This is because the focus of public financial governance is to ensure that basic needs are fulfilled, and in general, as society's income decreases, so too does the purchasing power of people.

According to Fridson and Alvarez (2011), these circumstances will have even further ramifications, particularly for the industrial sector, which faces the greatest level of credit risk. Sales decline dramatically as the market is unviable due to buyers being unable to repay their debts to businesses during the economic downturn.

It is a fact that a decrease in sales without a corresponding decline in average receivables will significantly affect the receivables turnover value. Notta and Vlachvei (2014) highlight a correlation between a high level of

money in trade receivables and a slower accounts receivable turnover. Accordingly, the second hypothesis is proposed as follows:

H4: COVID-19 pandemic is detrimental to the activity ratio.

3. Research Method

Based on the above-developed hypotheses, there is a need to develop a research method that needs to be followed whilst conducting this study which is done using insights from Sauders et al. (2015).

3.1 Research Design

This study is a Saudi case study and will test in detail the impact of COVID-19 pandemic on the financial performance of companies in Saudi Arabia before. This research focuses on analyzing the financial performances of Saudi firms over an observation period (2019–2020). The researcher will collect the data for the observation period and then compare before and after COVID-19 using graphical analysis, Kolmogorov Smirnov's and Shapiro-Wilk's One Sample analysis methods for normality tests, and Wilcoxon Signed-Rank test for hypothesis tests (Sauders et al., 2015).

3.2 Sampling Technique

The purposive sampling technique is used in this study where the sampling criteria are determined based on the policies of the researchers (Sauders et al., 2015). This study used sampling criteria such as the following: the financial statements of constituents from the Tadawul All Share Index (TASI) on the Saudi Stock Exchange, from 2019 to 2020 (one year before, during, and after COVID-19 pandemic). The primary source of information was the research website, Morningstar, as Hines (2020) and Schmelzer (2020) highlighted that with the implementation of AI and ML in data collection, Morningstar has reduced error probability in the data accuracy.

3.3 Data Collection

The method of documentation was used for data collection in this study where the TASI constituents' data as available on Morningstar was collected for the period 2019–2020. However, partial information could not be obtained for 79 companies because several companies in Saudi Arabia do not follow the calendar fiscal year in preparing their financial statements; therefore, these 80 companies were discarded and 130 companies are considered. In table (1) presents the sample size of each sector and financial performance is measured by profitability (ROA), liquidity (CR), leverage and receivables turnover.

Table (1): Study Sample

Sector	Total Firms in This Sector	Number of Excluded Firm	The Sample Size for Analyzing
Energy	5	0	5
Material	43	7	36
Industrials	21	4	17
Consumer Discretionary	25	12	13
Communication Services	3	1	2
Consumer Staples	21	9	12
Healthcare	10	1	9
Financial	45	24	21
Information Technology	4	2	2
Utilities	4	2	2
Real Estate	29	18	11

Source: Authors Calculation

According to Saunders et al. (2015), a sample size of 130 can be considered to be an acceptable sample size as per the central theorem.

Whilst the researcher considered finding the data for these companies quarterly and then arriving at an adjusted consolidated annual statement as per the calendar fiscal year, however, that would have been beyond the scope of this study. Thus, a total of 130 companies were selected for this study and the following measures were developed from financial statements collected for these companies: the most commonly profitability, liquidity measured ratios are ROA, current ratio respectively, leverage and receivable turnover RTO.

3.4 Data Analysis

The analysis conducted in this study refers to Alsamhi et al. (2022) and Nguyen (2022) who conducted similar studies in the Indian and Vietnamese context. However, several limitations of Alsamhi et al. (2022) and Nguyen (2022) have been addressed and attempts have been made to overcome them in this study.

The first step in the analysis is a need to understand the descriptive statistics including mean, median, standard deviation, minimum and maximum. This allows us to understand if there is a difference in the financial ratios over the observation period. Also, there is a need to understand the normality of data distribution across each sector for which Kolmogorov-Smirnov and Shapiro-Wilk tests will be conducted using the SPSS tool. However, by looking at the data, it is difficult to test the hypothesis; therefore, the SPSS tool will be used to conduct a Wilcoxon Signed-Rank test. For conducting tests using SPSS and interpreting outputs from SPSS, Berg (2022) is referred to.

4. Result & Discussion

Based on the theoretical framework and research method, the data is presented, analyzed, and discussed below.

Table (2): Descriptive Statistics of Financial Measures for Saudi Firms

Variables	N	Min	Max	Mean	Median	Std. Deviation
ROA_before Covid -19	130	-62.42	23.29	1.58	1.79	9.44
ROA_after Covid -19	130	-47.30	46.97	2.47	2.23	9.44
Current ratio_before Covid -19	130	.00	11.08	1.94	1.37	2.02
Current ratio_after Covid -19	130	.00	9.48	1.89	1.33	2.00
Leverage_before Covid -19	130	1.01	15.69	2.76	2.09	2.16
Leverage_after Covid -19	130	1.01	15.16	2.97	2.05	2.55
RTO_before Covid -19	130	-112.41	147.21	291.90	.16	1514.09
RTO_after Covid -19	130	-179.79	102.53	223.71	.08	1121.11

In table 2 can be interpreted in the following manner: The mean is the average value of a dataset and the median is the central value of the dataset. Whilst the mean is more commonly used than the median; however, median is robust to outliers, whereas the mean is sensitive to outliers. standard deviation (square root of variance) shows the spread of the financial measure around the mean for that sector. The higher the standard deviation, higher the volatility associated with the data set. Min refers to the minimum value in the sector, and max refers to the maximum value in the sector.

Although the values of a parameter for each sector vary pre- and post-pandemic, Table 2 below shows an increase in the average ROA, which suggests that the firms' financial performance (as gauged by changes in the ROA) is unaffected by COVID-19 pandemic. Prior to and after the pandemic, the average ROA values were 1.58 and 2.47, respectively. Therefore, the average ROA value increased by 0.89 during this time.

In Saudi enterprises, the average CR value changed only minimally between the pre- and post-pandemic periods. Prior to and after the pandemic, the average CR values were 1.94 and 1.89, respectively, which was a decrease of 0.05 during this time.

The average LEV value increased after COVID-19 pandemic. Prior to and after the pandemic, the average LEV values were 2.76 and 2.97, respectively. This result indicates that the firms' financial performance was negatively affected by COVID-19 pandemic.

Performance appraisal is different when measured against changes in the RTO value. Employing this standard, it shows that the firms' financial performance was hindered by COVID-19 pandemic.

Table (3): Normality Statistics of Financial Measures for Saudi Firm

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig	Statistic	df	Sig
ROA_before Covid -19	.170	130	.00	.775	130	.00
ROA_after Covid -19	.129	130	.00	.879	130	.00
CR_before Covid -19	.195	130	.00	.801	130	.00
CR_after Covid -19	.222	130	.00	.777	130	.00
LEV_before Covid -19	.213	130	.00	.723	130	.00
LEV_after Covid -19	.221	130	.00	.675	130	.00
RTO_before Covid -19	.482	130	.00	.222	130	.00
RTO_after Covid -19	.476	130	.00	.203	130	.00

According to Berg (2022), the significance for both Kolmogorov-Smirnov and Shapiro-Wilk tests must be greater than 0.01 (at a 99% confidence interval) to accept the null hypothesis that the data follows a normal distribution.

In this study, the Shapiro-Wilk and Kolmogorov Normality Tests were performed in order to analyse the data's normal distribution. These tests provide insight into whether a parametric (paired sample t-test) or non-parametric (Wilcoxon Signed Ranks Test) should be conducted. As presented in Table 4, the normality tests indicate that the data is normally distributed, as the PVs of all variables in all sectors do not exceed 0.05. This shows that the non-parametric Wilcoxon Signed Ranks Test is the most suitable in this case. The hypothesis is checked by using a Wilcoxon Signed-Rank test that focuses on understanding if there is a significant difference for a parameter in 2019 and 2020 (before and after the pandemic). In table 4 shows that there is no a significant difference in all values. Values of 0.656, 0.787, 0.179 and 0.859 respectively (two-tailed) > 0.05. Therefore, all hypotheses are refused .

Results show that following COVID-19 pandemic, 71 firms experienced decreased ROA value and 59 enterprises disclosed a reduced ROA value. As the current ratios ties values are 0, it denotes that the ROA values differ in the pre- and post-pandemic periods.

In the post-pandemic period, 56 firms experienced decreased CR, while 54 firms experienced increased CR.

Table (4): Wilcoxon Signed-Rank Test of Financial Measures for Saudi Firms

Variables		N	Mean Rank	Sum of Ranks	Z-Statistic	Sig
ROA_ after compare to ROA before Covid -19	Negative Ranks	71 ^g	57.27	4066.00	-4.45 (○)	.656
	Positive Ranks	59 ^h	75.41	4449.00		
	Ties	0 ⁱ				
	Total	130				
CR_ after compare to CR before Covid -19	Negative Ranks	56 ^a	56.13	3143.00	-2.70 (+)	.787
	Positive Ranks	54 ^b	54.85	2962.00		
	Ties	26 ^c				
	Total	130				
LEV_ after compare to LEV before Covid -19	Negative Ranks	57 ^p	60.5	3448.50	-1.344 (○)	.179
	Positive Ranks	69 ^q	65.98	4552.50		
	Ties	4 ^r				
	Total	130				
RTO_ after compare to RTO_ before Covid -19	Negative Ranks	53 ^m	58.55	3103.0	-0.177 (○)	.859
	Positive Ranks	72 ⁿ	54.66	3125.0		
	Ties	5 ^o				
	Total	130				

Table (4) also shows that during the pandemic, 57 companies did not experience a reduction in LEV value, but 69 did. This is shown by the positive and negative N values or 57 and 69, respectively. Furthermore, four companies did not experience any changes in LEV pre- and post-pandemic.

In addition, RTO value of 5 denotes that only five companies had unchanged RTO values pre- and post-pandemic. 54.86 firms had increased CR values, while 59.29 firms had decreased CR values, which indicates that the average CR values differ in the pre- and post-pandemic periods.

4.1 Discussion

The study aimed at understanding if there was an impact of COVID-19 on the firms in Saudi Arabia for the following financial parameters: profitability, liquidity, leverage and receivable turnover.

Whilst trends analysis and descriptive statistics present an overview of the data, however not many inferences can be drawn, therefore there was a need to conduct statistical analysis. From table 4, it can be inferred that there is an insignificant difference between parameters in each pair which means that there is a need to reject all null hypothesis. Therefore, the finding can be stated as:

Thus, there is no significant impact of COVID-19 on the Saudi firms' performance from overall factors which is reassuring considering that several countries faced economic downturn due to varying problems including reduced household consumption in the UK (Dey-Chowdhury et al., 2021), reduced credit availability in Bangladesh (Karim et al., 2021), goodwill impairment and reduced international trade in China (Shen et al., 2020; and Xu et al., 2021), and job loss in the informal sector in India (Goswami et al., 2021). In the above-mentioned countries, similarly to Saudi Arabia, strict lockdowns were imposed. Also, the major industry in Saudi Arabia, "energy" faced challenges on two dimensions: First, as an industry, remote working is difficult in energy (Alrashed et al., 2020) and second, due to reduced global mobility the demand for fuel reduced, and the problem of excess production had to be addressed

by reducing production (EIA, 2021). Also as highlighted by Alrashed et al. (2020), the country's economy contracted by 4.1% in 2020.

A possible explanation for the above findings where only one measure showed negative impact could be that the impact would have been short-term (in 2020) and by 2021, many of the businesses would have recovered, however, there is a need for future studies on the topic.

5. Conclusion

Usually, businesses have plans to respond to challenges in their environment, at times the challenge could be like COVID-19 pandemic that was "severely disruptive" for the entire world in a short period. Most of the countries responded to the crisis by implementing strict lockdowns; however, it created another problem—many businesses faced disruption in form of reduced demand or disruption in supply or both. This snowballed into bigger problems in various countries. Saudi Arabia two faced two problems: supply disruption as some roles required onsite presence and reduced energy demand leading to reduced production.

This study aimed at understanding if there was a negative impact of the pandemic on the firms in Saudi Arabia. This was done by tracking the financial performance of 130 Saudi firms using the following parameters: profitability, liquidity, leverage, Leverage and receivable turnover over the period 2019–2020.

Familiarity with the data was increased by conducting trend analysis and descriptive analysis. The Wilcoxon Signed-Rank test was used to measure if there is a difference in a parameter before and after the pandemic. The key result is that there is no significant difference for any parameters before and after the pandemic, which is reassuring considering that due to strict lockdowns, difficulty in remote working in energy industry, and reduced global fuel demand, the Saudi economy had shrunk.

Whilst the current study serves as an exploratory foundation for future studies, it significantly contributes in identifying that businesses in Saudi Arabia should not be much concerned about adverse impact of Covid-19 like events that may potentially disrupt business continuity. These findings can be used by businesses to plan for similar 'disruptions' in the future.

References

- Al-Mansour, J. F., and Al-Majmi, S. A. (2020). Corona virus COVID-19: Supply chain disruption and implications for strategy, economy, and management. *The Journal of Asian Finance, Economics and Business*, 7(9), 659–672. <https://doi.org/10.13106/jafeb.2020.vol7.no9.659>
- Ali, M., Rhaman, S. B., and Frederico, G. F. (2021). Capability components of supply chain resilience for readymade garments (RMG) sector in Bangladesh during COVID-19. *Modern Supply Chain Research and Applications*, 6, 15. <https://doi.org/10.1108/MSRA-06-2020-0015>
- Alrashed, S., Min-Allah, N., Saxena, A., Ali, I., and Mehmood, R. (2020). Impact of Lockdowns on the Spread of COVID-19 in Saudi Arabia. *Informatics in Medicine Unlocked*, 20, 100420. <https://doi.org/10.1016/j.imu.2020.100420>
- Alsamhi, M. H., Al-Ofairi, F. A., Farhan, N. H. S., Al-Ahdal, W. M., and Siddiqui, A. (2022). Impact of Covid-19 on Firms' Performance: Empirical evidence from India. *Cogent Business & Management*. 9(1), 1–16.
- Atayah, O. F., Dhiaf, M. M., Najaf, K., and Frelevico, G. F. (2021). Impact of COVID-19 on the financial performance of logistics firms: Evidence from G-20 countries. *Journal of Global Operations and Strategic Sourcing*, 11(1), 28. <https://doi.org/10.1108/JGOSS-03-2021-0028>
- Bahgat, G. (2013). The Changing Saudi Energy Outlook: Strategic Implications. *Middle East Journal*, 67(4), 565–579. <https://doi.org/10.3751/67.4.14>
- Berg, R. G. V. (2022). SPSS Output- Basics, Tips, and Tricks. *SPSS Tutorials*. [Online]. Available at: <https://www.spss-tutorials.com/spss-output/> [16th July 2022].
- Bintang, F. M., Malukah, A., and Afifudin, K. (2019). Effect of previous year's audit opinion, debt default, liquidity ratio, leverage ratio ongoing concern audit opinion. *E-JRA*, 8(10), 98–115.
- Chandra, P. (2011). *Financial Management: Theory and Practice*. 9th Ed. McGraw Hill Education: New Delhi.
- Devi, S., Warasniasih, N. M. S., Masdiantini, P. R., and Musmini, L. S. (2020). The impact of COVID-19 pandemic on the financial performance of firms on the Indonesia stock exchange. *Journal of Economics, Business, & Accountancy Ventura*, 23(2), 226–242. <https://doi.org/10.14414/jebav.v23i2.2313>
- Dey-Chowdhury, S., McAuley, N., & Walton, A. (2021). International Comparisons of GDP During the Corona virus (COVID-19) Pandemic. *Office for National Statistics: UK Government*. [Online]. <https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/internationalcomparisonsofgdpduringthecoronaviruscovid19pandemic/2021-02-01> [16th July 2022].
- EIA. (2021). Country Analysis Executive Summary: Saudi Arabia. *US Energy Information Administration*. [Online]. [https://www.eia.gov/international/content/analysis/countries_long/Saudi Arabia/saudi_arabia.pdf](https://www.eia.gov/international/content/analysis/countries_long/Saudi%20Arabia/saudi_arabia.pdf). [19th July 2022].

- Elmarzouky, M., Albitar, K., and Hussainey, K. (2021). Covid-19 and Performance Disclosure: Does Governance Matter? *International Journal of Accounting & Information Management*, 29(5), 776–792. <https://doi.org/10.1108/ijaim-04-2021-0086>
- Fraser, L. M., and Ormiston, A. (2016). *Understanding financial statement* (11th ed.). London, UK: Pearson.
- Fridson, M. S., and Alvarez, F. (2011). *Financial statement analysis: a practitioner's guide* (Vol. 597). New York: John Wiley & Sons.
- Goswami, B., Mandal, R., and Nath, H. K. (2021). Covid-19 Pandemic and Economic Performances of the States in India. *Economic Analysis and Policy*, 69, 461–479. <https://doi.org/10.1016/j.eap.2021.01.001>
- Hadiwardoyo, W. (2020). National economic loss due to the COVID-19 pandemic. *Baskara Journal of Business & Entrepreneurship*, 2(2), 83–92. <https://jurnal.umj.ac.id/index.php/baskara/article/view/6207>
- Hakim, L. (2012). Efficiency level study: comparison of company size and the effects of the economic crisis. *Jurnal Ilmu Manajemen dan Akuntansi Terapan*, 3(1), 1–11. <http://jurnal.stietotalwin.ac.id/index.php/iimat/article/view/31/28>
- Hines, M. (2020). How Going All-In on Machine Learning Changed Data Collection at Morningstar. *BuiltIn Chicago*. [Online]. <https://www.builtinchicago.org/2020/02/28/morningstar-machine-learning-data-collection>. [24th July 2022].
- Istiningrum, A. A. (2005). Comparison of financial performance of service companies listed on the Jakarta stock exchange before and during the monetary crisis. *Jurnal Pendidikan Akuntansi Indonesia*, 4(1), 117–33. <https://doi.org/10.21831/jpai.v4i1.1776>
- Jahangir, M. A., Muheem, A., and Rizvi, M. F. (2020). Corona virus (COVID-19). History, Current Knowledge and Pipeline Medications. *Journal of Pharmacy and Pharmacology*, 4(1), 1–9. <https://doi.org/10.31531/2581-3080.1000140>
- Karim, M. R., Shetu, S. A., and Razia, S. (2021). COVID-19, Liquidity and Financial Health: Empirical Evidence from South Asian Economy. *Asian Journal of Economics and Banking*, 5(3), 307–323. <https://doi.org/10.1108/ajeb-03-2021-0033>
- Khatib, S. F. A., & Nour, A. N. I. (2021). The impact of corporate governance on firm performance during the COVID-19 pandemic: evidence from Malaysia. *The Journal of Asian Finance, Economics and Business*, 8(2), 943–952. <https://doi.org/10.13106/jafeb.2021.vol8.no2.0943>
- Lin, Q., et al. (2021). A Conceptual Model for the Corona virus Disease 2019 (COVID-19) Outbreak in Wuhan, China with Individual Reaction and Governmental Action. *International Journal of Infectious Diseases*, 93, 211–216. <https://doi.org/10.1016/j.ijid.2020.02.058>
- Mohan, B. S. and Nambiar, N. (2020). COVID-19: An Insight into SARS-CoV-2 Pandemic Originated at Wuhan City in China's Hubei Province. *Journal of Infectious Diseases and Epidemiology*, 6(4), 1–8. <https://doi.org/10.23937/2474-3658/1510146>
- Nguyen, H. T. X. (2022). The Effect of COVID-19 Pandemic on Financial Performance of Firms: Empirical Evidence from Vietnamese Logistics Enterprises. *Journal of Asian Finance, Economics, and Business*, 9(2), 177–183.
- Notta, O., and Vlachvei, A. (2014). The impact of the financial crisis on firm performance in the case of Greek food manufacturing firms. *Procedia Economics and Finance*, 14, 454–460. [https://doi.org/10.1016/S2212-5671\(14\)00734-5](https://doi.org/10.1016/S2212-5671(14)00734-5)
- Rababah, A. et al. (2020). Analyzing the effects of COVID-19 pandemic on the financial performance of Chinese listed enterprises. *Journal of Public Affairs*, 20(4), e2440. <https://doi.org/10.1002/pa.2440>
- Rofiqoh, I. (2001). The effect of the monetary crisis on the performance of public companies on the stock exchange Jakarta. *Jurnal Akuntansi dan Investasi*, 2(2), 87–104. <https://journal.umy.ac.id/index.php/ai/article/view/618>
- Saunders, M., Lewis, P., and Thornhill, A. (2015). *Research Methods for Business Students*. 7th Ed. London, Pearson.
- Schmelzer, R. (2020). Automating Data Collection for AI at Morningstar. *Forbes*. [Online]. Available at: <https://www.forbes.com/sites/cognitiveworld/2020/10/01/automating-data-collection-for-ai-at-morningstar/?sh=38074a3b393b>. [24th July 2022].
- Shaik, A. R. (2021). COVID-19 pandemic and the reaction of Asian stock markets: Empirical evidence from Saudi Arabia. *The Journal of Asian Finance, Economics and Business*, 8(12), 1–7. <https://doi.org/10.13106/jafeb.2021.vol8.no12.0001>
- Shen, H., Fu, M., Pan, H., Yu, Z., & Chen, Y. (2020). The impact of the COVID-19 pandemic on firm performance. *Emerging Markets Finance and Trade*, 56(10), 2213–2230. <https://doi.org/10.1016/j.resourpol.2020.101828>
- Sipayung, F., Ginting, L., and Sibarani, M. L. L. (2021). Comparison Analysis of Start-Up Company Liquidity Before and After the Covid-19 Pandemic. *Proceedings of the International Conference on Economics, Management and Accounting (ICEMAC 2021)*, Indonesia.
- Soyres, F. D., Santacreu, A. M., and Young, H. (2022). Demand–Supply Imbalance During the Covid-19 Pandemic: The Role of Fiscal Policy. *Vox*. [Online]. <https://voxeu.org/article/demand-supply-imbalance-during-covid-19-pandemic>. [19th July 2022].
- The World Bank. (2020). The Global Economic Outlook During the COVID-19 Pandemic: A Changed World. *The World Bank*. [Online]. <https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world>. [19th July 2022].
- Van Hoek, R. (2020). Research opportunities for a more resilient post-COVID-19 supply chain – closing the gap between research findings and industry practice. *International Journal of Operations and Production Management*, 40(4), 341–355. <https://doi.org/10.1108/IJOPM-03-2020-0165>

- WHO. (2020). WHO Covid-19 Dashboard. *World Health Organisation*. [Online]. <https://covid19.who.int/>. [16th July 2022].
- Wu, S. et al. (2021). The Impact of COVID-19 Lockdown on Atmospheric CO₂ in Xi'an, China. *Environmental Research*. 197, 1–7. <https://doi.org/10.1016/j.envres.2021.111208>
- Xu, L., Yang, S., Chen, J., and Shi, J. (2021). The Effect of COVID-19 Pandemic on Port Performance: Evidence from China. *Ocean & Coastal Management*. 209, 105660. <https://doi.org/10.1016/j.ocecoaman.2021.105660>
- Yahya, A. T., Akhtar, A., and Tabash, M. I. (2017). The Impact of Political Instability, Macroeconomic and Bank-Specific Factors on the Profitability of Islamic banks: An Empirical Evidence. *Investment Management and Financial Innovations*, 14(4), 30–39. [https://doi.org/10.21511/imfi.14\(4\).2017.04](https://doi.org/10.21511/imfi.14(4).2017.04)