

**COVID 19 ANNOUNVEMENTS, STOCK LIQUIDITY AND AVIATION  
INDUSTRY STOCK RETURN; A CASE OF KENYA AIRWAYS.**

**BY**

**DAMIEN TREVOR PETROUSSE**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS  
AND ECONOMICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE AWARD OF A MASTER OF BUSINESS ADMINISTRATION  
(AVIATION OPTION)**

**MOI UNIVERSITY**

**2023**

## DECLARATION

### Declaration by Candidate

I declare that this project is my original work and has not been presented for an award of a degree in any other University. No part of this Project can be replicated without prior consent of the author and/or Moi University.

Signed..... Date .....

**Damien Trevor Petrousse**

**EASA/EMBA/0218/22**

### Declaration by the Supervisors

I confirm that this research project was conducted by the candidate under my supervision.

Signed..... Date .....

**Dr. Zurah Mohammed**

Department of Marketing and Logistics

School of Business and Economics

Moi University

Signed..... Date .....

**Dr. Gloria Muthoni**

Department of Marketing and Logistics

School of Business and Economics

Moi University

## **DEDICATION**

I dedicate my project to my grandmother Lucy Petrousse and great grandmother Leone Gontiter who has never failed to give support, inspiration, strength and push for tenacity throughout my education.

## **ACKNOWLEDGEMENT**

Many people have remarkably contributed to this research project, a few of whom I need to mention and express my gratitude. I most sincerely wish to thank my supervisors, Dr. Gloria Muthoni and Dr. Zurah Mohammed for their tireless guidance throughout the proposal stage. I have benefitted greatly from your wealth of knowledge and meticulous guidance.

## ABSTRACT

The stock market's reaction during the COVID-19 epidemic, when the global economy was experiencing the biggest crisis since the Great Depression, has caused some anxiety. Some economists (some of whom have won the Nobel Prize) have viewed these responses as proof that stock markets are not entirely efficient, while others have underlined the challenge of evaluating the rapid flow of information about the pandemic and its financial ramification. One of the businesses that was most seriously impacted by the 2020 coronavirus pandemic is the aviation sector. People were or are still too afraid to fly because of travel prohibitions. The worldwide flight capacity was impacted by national restrictions on international travel, long-distance travel bans, and trip cancellations, all of which have so far caused the aviation industry to suffer severe losses. Though studies have demonstrated that COVID 19 pandemic affects stock price, existing empirical literature is scanty particularly among listed airline companies in developing countries. From this background, this study sought to determine the mediating effects of stock liquidity on the relationship between COVID19 announcements and the Kenya Airways stock returns. Specifically, the study examined the effect of COVID 19 cumulative reported cases, COVID 19 cumulative death reported. Additionally, the study determined whether stock liquidity mediated the relationship between COVID 19 cumulative reported cases, COVID 19 cumulative death reported and Kenya Airways stock returns. The study was grounded on the information asymmetry theory. The study adopted both the longitudinal and explanatory research design. The study focused on Kenya airways between March 2020 and November 2022. The data was secondary in nature and was extracted from NSE and WHO databases through content analysis. Data was analysed through descriptive and inferential statistics. Based on the regression results, the study found that Covid 19 cumulative reported cases ( $\beta = -0.0173$ ;  $\rho < 0.05$ ) and Covid 19 cumulative death reported ( $\beta = -0.0421$ ;  $\rho < 0.05$ ) had a significant negative effect stock prices of Kenya airways. Moreover, the study established that stock liquidity had a partial mediating effect on the relationship between COVID 19 cumulative reported cases ( $\beta = -0.0042$ ,  $\rho < 0.05$ ). However, it did not mediate COVID 19 cumulative death reported ( $\beta = -0.0007$ ,  $> 0.05$ ) and Kenya Airways stock returns. The study concluded that the Covid 19 cumulative reported cases and COVID 19 cumulative death reported are key determinants of stock prices of Kenya airways. Additionally, the study concluded that stock liquidity mediates that relationship. The study's findings have implications for managers and regulators. First, it is imperative for managers to establish detailed contingency plans that delineate precise measures to be implemented in light of fluctuating levels of pandemic severity and heightened investor confidence. Second, it is imperative for the regulatory body to give precedence to implementing measures that effectively enhance stock liquidity for aviation companies listed on the stock market, particularly in the midst of a global pandemic such as COVID-19. The study suggests that it would be beneficial for future research to explore the correlation between the variables examined in this study across other sectors, as the impacts of COVID-19 may vary across different economic segments. Furthermore, academic research may delve into the relationship across various legal systems. Further research efforts may explore additional moderating factors, such as corporate and firm-specific characteristics.

## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
ABBREVIATIONS .....	xi
DEFINITION OF TERMS .....	xii
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.0 Overview.....	1
1.1 Background of the Study .....	1
1.1.1 Kenya airways .....	12
1.2 Statement of the Problem.....	15
1.3 Study Objectives .....	17
1.4 Research Hypothesis .....	18
1.5 Significance of the Study .....	18
1.6 Scope of the Study .....	19
<b>CHAPTER TWO .....</b>	<b>20</b>
<b>LITERATURE REVIEW .....</b>	<b>20</b>
2.0 Overview.....	20
2.1 Review of Concepts .....	20
2.1.1 Covid 19 Pandemic .....	20
2.1.2 Industry Stock Returns .....	22
2.1.3 Stock Liquidity .....	23
2.2 Review of Theories .....	24
2.2.1 Information Asymmetry Theory .....	24
2.3 Empirical Review.....	26
2.3.1 Covid 19 Cumulative Announced Cases on Stock Returns .....	26
2.3.2 Covid 19 Cumulative Death Announced on Stock Returns.....	30
2.4 Mediating role of Stock Liquidity.....	37

2.5 Control Variable.....	40
2.5.1 Transaction Cost on Stock Returns .....	40
2.6 Summary and Gap.....	42
2.7 Conceptual Framework.....	43
<b>CHAPTER THREE .....</b>	<b>44</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>44</b>
3.0 Overview.....	44
3.1 Research Design.....	44
3.2 Target Population.....	45
3.3 Sample Design .....	45
3.4 Data Collection Procedure .....	45
3.4.1 Data Collection Instruments.....	45
3.5 Data Analysis and Presentation .....	45
3.5.1 7 Test of Mediation Effect .....	45
3.6 Research Model .....	46
3.7 Diagnostic Tests.....	47
3.7.1 Normality Test.....	47
3.7.2 Heteroscedasticity test.....	48
3.7.3 Multicollinearity .....	48
3.8 Measurement of Variables .....	49
3.8.1 Dependent Variable.....	49
3.8.2 Independent Variable .....	49
3.8.3 Mediator Variable .....	50
3.8.4 Control Variable.....	50
3.9 Ethical Consideration.....	50
<b>CHAPTER FOUR.....</b>	<b>51</b>
<b>DATA ANALYSIS, PRESENTATION, AND INTERPRETATION .....</b>	<b>51</b>
4.0 Overview.....	51
4.1 Descriptive Statistics.....	51
4.2 Correlation Analysis .....	53
4.3 Multi-collinearity Test .....	54
4.4 Normality Test .....	54
4.5 Heteroskedasticity Test.....	55
4.6 Specification Error Test .....	56

4.7 Regression Results .....	56
4.7.1. The Effect of the Covid 19 on Stock Prices. ....	56
4.7.2 The Mediating Effect of Stock Liquidity on the Relationship between Covid 19 Announcements and Kenya Airways Stock Returns.....	61
<b>CHAPTER FIVE .....</b>	<b>64</b>
<b>SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS ..</b>	<b>64</b>
5.0 Overview .....	64
5.1 Summary of the Findings.....	64
5.1.1 Effect of Covid 19 Cumulative Reported Cases on Kenya Airways Share Prices .....	64
5.1.2 Effect of Covid 19 cumulative death reported on Kenya airways share prices .....	65
5.1.3 Mediation effect of Stock Liquidity on the Relationship between Covid 19 Cumulative Death Reported and Kenya Airways Share Prices .....	66
5.1.4 Mediation effect of Stock Liquidity on the Relationship between Covid 19 Cumulative Death Reported and Kenya Airways Share Prices .....	67
5.2 Conclusion .....	68
5.3 Recommendations.....	69
5.3.1 Policy Recommendations .....	69
5.3.2 Managerial Implication .....	70
5.3.2 Theoretical Implication .....	72
5.4 Limitations of the Study.....	74
5.5 Recommendations for Future Research .....	75
<b>REFERENCES .....</b>	<b>77</b>
<b>APPENDICES .....</b>	<b>83</b>
Appendix I: Data Collection Schedule.....	83
Appendix II: Stata Output .....	84

**LIST OF TABLES**

Table 4.1: Descriptive Statistics Results.....	53
Table 4.2: Pairwise Correlation Results.....	54
Table 4.3: Multicollinearity Test Results.....	54
Table 4.4: Normality Test Results .....	55
Table 4.5: Heteroskedasticity Test Results .....	56
Table 4.6: Specification Error Test Results .....	56
Table 4.7: Regression Results.....	57
Table 4.8: Summary Table for Mediation.....	63
Table 4.9: Summary of Hypothesis Test Results.....	63

## LIST OF FIGURES

Figure 2.1: Conceptual framework .....	43
--	----

**ABBREVIATIONS**

ACI	Airports Council International
BLUE	Best, Linear and Unbiased Estimators
CAPM	Capital Asset Pricing Model
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Square
SARS	Severe acute respiratory syndrome
VIF	Variance Inflation Factor
WHO	World Health Organisation

## DEFINITION OF TERMS

**Covid 19 cumulative cases:** refers to the total number of cumulative confirmed cases of the COVID-19 disease caused by the SARS-CoV-2 virus that have been reported within a specific geographic area or over a given period of time. Cumulative cases represent the sum of all confirmed cases up to the present time or a particular date.

**Covid 19 cumulative death reported:** refers to the number of cumulative deaths attributed to the COVID-19 disease caused by the novel coronavirus SARS-CoV-2.

**Stock price:** It refers to how the firm performs financially measured by some financial yardsticks.

**Stock volume:** refers to the total number of shares of a particular stock or security that are traded within a specific time frame, typically during a trading session (e.g., a day) or over a specified period (e.g., a month).

**Transaction cost:** refer to the expenses and fees incurred when buying or selling financial assets, such as stocks, bonds, real estate, or other investments.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

This section discusses the background of the study, the institutional setting of Kenya Airways, the statement of the problem, the research objectives, the hypotheses, the significance and the scope of the study.

#### **1.1 Background of the Study**

In March of 2020, the World Health Organization (WHO) reported that a pandemic had occurred as a result of an epidemic of the coronavirus known as COVID-19. Overall, this sickness, which was suspected of being connected to a seafood market in Wuhan, which is the capital city of Hubei province in China (Sohrabi et al., 2020), spread to more than 101.5 million people and caused more than 2.1 million fatalities by the 30th of January in 2021 (World Health Organization, 2021). Since the famous "Spanish Influenza" of 1918, the 20th century had already witnessed two pandemics: the "Asian flu" of 1957 and the "Hong Kong flu" of 1968. Both of these pandemics occurred in the same year. In the 21st century, there have been four more pandemic outbreaks: SARS in 2002, "bird flu" in 2009, MERS in 2012, and Ebola, which reached its climax in 2013–2014 (Baldwin and Weder di Mauro, 2020). The Spanish flu epidemic of 1918 is the previous pandemic that most closely parallels the scope and distribution of COVID-19. There are, however, some key distinctions between the global economic conditions that prevailed during COVID-19 and those that prevailed during the Spanish flu pandemic that took place in 1918. When I was growing up, the world was not nearly as interconnected as it is now, and individuals did not travel nearly as frequently for work as they do today. The media coverage of the day-to-day information pertaining to the COVID-19 pandemic is another major feature that makes the pandemic unusual. This

information covers the daily growth in the number of cases, the number of deaths, the number of persons tested, the number of days in lockdown, as well as fiscal and monetary measures during the pandemic (Haroon and Rizvi, 2020). People in various nations have various points of view about the information that is relevant to the pandemic because of pre-existing conditions, such as the level of readiness of the healthcare system to deal with infectious diseases and the policies that are currently being implemented by the government to deal with the pandemic.

The International Air Transport Association (IATA) reports that the aviation business accounts for 35 percent of the total value of international trade, generates economic activities amounting to 2.7 trillion US dollars, and is responsible for the employment of 65.5 million people all over the world. It is estimated that roughly 4.5 billion people were transported around the world by airline firms in the year 2019, linking cities and enterprises all over the world (Air Transport Action Group, 2020). Because of this, the global aviation industry is an essential component of the economy of the entire world. As a result of the outbreak of the COVID-19 pandemic (World Health Organisation, 2020), governments all over the world were compelled to implement lockdowns, travel was prohibited, and aeroplanes all over the world were grounded (Bureau of Labour Statistics, 2020). By the middle of March in the year 2020, there was a significant decrease in air travel across the entire world (Suau-Sanchez et al., 2020). The fall in international air travel was the most significant, with the availability of seat kilometres falling by almost 90 percent from the previous year to the current year during the month of April 2020 (Suau-Sanchez et al., 2020).

The performance of a company for a considerable period, the evaluation of financial success has predominantly centred on profits, as evidenced by its correlation with the company's share price. However, there has been a shift in recent decades. The

interpretation of financial performance at a particular stage of development varies depending on the individual's perspective on the financial data. Managers exhibit a keen interest in profits due to the inherent alignment between their objectives and the pursuit of profit maximisation. Shareholders exhibit a vested interest in the optimisation of wealth accumulation through the augmentation of market capitalization and the disbursement of dividend payments. Commercial entities prioritise the solvency of a corporation, while creditors prioritize the timely repayment capacity of an institution. The employees of the company express a desire for employment stability and substantial financial gains, while the state exhibits an interest in an effective corporation that fulfils its tax and legal requirements (Valentin, 2015). Financial indicators are utilised by corporate executives to assess, disclose, and enhance organisational performance. Financial and non-financial metrics are employed to obtain a comprehensive perspective on performance. The present analysis holds significant importance for all stakeholders, particularly stockholders. According to Branch and Gale (2015), various elements contribute to the market value of a firm, which in turn represents the wealth of its shareholders. These factors encompass the risks encountered by the organisation, the potential for economic growth in terms of future revenues, and the level of profitability. According to Biel and Lawrence (2016), financial indicators derived from accounting information are deemed adequate in assessing the valuation of shareholder assets, constituting the primary determinants of a company's market price. The financial performance of a firm is mostly determined by its position in the market. Financial success, sometimes referred to as profitability in certain time periods, can be classified into two main components: net sales and net profit margin. According to Riew et al. (2015), it is argued that both profit margin and net asset turnover exert a substantial influence on a company's profitability, regardless of the specific time period. Significant

sales are indicative of enhanced utilisation of a company's assets, so serving as a metric for evaluating the company's operational efficiency. According to Kimotho (2015), a company's substantial rate of return is associated with superior market management, resulting in increased returns on investment. Fruhan (2015) asserts that the success of an institution is significantly influenced by factors such as risk and growth. The market value of a firm is contingent upon its performance, which in turn is influenced by the degree of risk involved. Anticipated future earnings, alternatively referred to as future profit potentials, exert a significant influence on a company's market value in the stock exchange, as investors discount the company's future profit potential to enhance its present worth.

Within the scope of the pandemic caused by the Coronavirus in the year 2020, the aviation industry is among the most severely affected industries. People are fearful of flying because there are travel restrictions in place, and they continue to be afraid of flying. Significant losses have been incurred by the aviation sector as a result of country-specific rules on international flights, prohibitions on traveling long distances, and trip interruptions. These factors have had an impact on the global capacity for flights. Restrictions were implemented by governments in a number of nations in an effort to stop the virus from spreading further. But the most essential question is how a sector that is so large and significant can bounce back from this. In order for the aviation sector to emerge from this challenge even more successful than they were before, what steps need to be taken? The crisis was handled differently in what ways.

In an effort to contain the spread of the coronavirus, an increasing number of nations throughout the world have begun to restrict domestic travel and close their borders beginning in the year 2020. Consequently, the whole airline business around the world has been impacted as a result of the decision to cancel practically all flights in an effort

to stop the spread of the virus (Mazareanu, 2020). In a recent declaration, the International Air Transport Association (IATA) stated that it is possible for airlines to see a loss of sales of \$113 billion in the year 2020. The impact of the outbreak was estimated to have been almost four times bigger just two weeks earlier (Weiss, 2020). This is a substantially higher estimate. A deal has been reached between the German government and Lufthansa, which was severely impacted by the epidemic, regarding a bailout of 9 billion euros, which is equivalent to \$9.8 billion. Another component of the plan is for the German government to acquire a twenty percent interest in Lufthansa, which it intends to sell back by the end of the year 2023. The new shares will be purchased by Germany at a price of 2.56 euros per share, resulting in a total purchase price of around 300 million euros.

The transportation sector was the one that suffered the most as a result of the decline in air travel (Dunford et al., 2020). In the year 2020, Josephs reported that the airline sector witnessed a decrease in capacity of approximately 60 to 80% at the main carriers. Based on projections made by the International Air Transport Association (IATA, 2020), reported that passenger revenues declined by 55% and that Revenue-Passenger-Kilometers (RPKs) decreased by 48% during the year 2020. It was projected by the International Civil Aviation Organization (ICAO, 2020) that the number of seats that airlines would provide would decrease by between 47 and 58 percent during the first half of the year 2020. This would result in a loss of between 503 and 607 million passengers, and airlines would likely experience a loss of gross operating revenues ranging from 112 to 135 billion dollars. According to Airports Council International (ACI, 2020), the pandemic caused by the COVID-19 virus eliminated fifty percent of the revenues generated by airports and twenty-five percent of the passenger traffic in

the year 2020. During the first three months of the year 2020, airlines reported a net loss of 5.2 billion US dollars (Bureau of Transportation Statistics, 2020).

In February 2020, during the initial stages of the outbreak confined to China, the International Air Transport Association (IATA) reported a significant financial setback of \$113 billion for the aviation industry. The aforementioned statistic exhibited a notable increase, rising from \$252 billion in March 2020 to \$314 billion in April 2020. Hence, the adverse effects of the COVID-19 pandemic on the sector have been growing at an exponential rate on a daily basis. A forecast has been made indicating a projected decline of 50% in international passenger traffic and a decrease of \$97 billion in airport revenues. Additionally, revenue generated from each passenger per kilometre, both domestically and internationally, is expected to decrease by approximately 48%. Revenues from international tourism reduced by an estimated range of \$300 to \$450 billion. The quantity of global merchandise trade is also anticipated to decline between 13% and 32%. Consequently, a contraction of -3% in Gross Domestic Product (GDP) worldwide is expected for the year 2020 in comparison to 2019. The current global impact seen by the aviation industry represents an unprecedented occurrence in human history. Numerous airlines are currently experiencing a time of financial distress. Some of the prominent international airline businesses that have a significant worldwide impact include, but cannot be limited to, Qatar Airways, Emirates, Delta Air Lines, American Airlines, South-west Airlines, United Airlines, China Southern and China Eastern Airlines, Ryanair, EasyJet, Lufthansa, and Turkish Airlines.

As the Covid-19 pandemic brought the transportation sector to halt with demand dipping for both national and intercontinental travel (Nian et al.2020). Slotnick (2020) found that several airline companies collapsed, suspended operations, or declared bankruptcy, as the heavy fixed costs that remain, even when the planes are not flying,

thus resulting in huge losses each month. Rashmi Rupesh et al. (2021) investigated the impact of financial distress and argued that business failure prediction models are very useful considering the fact that companies can benefit from warning signals and implicitly to avoid bankruptcy. Moreover, Bhavani et al. (2021) provided a new perspective on how financially distressed firms have an opportunity to try of reorganizing the business before filing for bankruptcy. An assessment of Covid-19 impact on air transport, (Suau-Sanchez et al., 2020) established that the aviation industry was being affected much more than other industries due to the pandemic. The report indicated that 98% of worldwide passenger revenues as of End-March 2020 were lost. The global airline industry suffered a heavy shock as most countries went on lockdown and travel restrictions both domestically and internationally until July 2020.

In a context that is global, following the announcement of the pandemic, which was brought about by the unchecked spread of the virus, the majority of countries went into lockdown. As a result, the majority of international airlines were compelled to cease their operations because of the closure of borders. In addition, the enforced quarantine that was implemented by the majority of countries contributed to the slowdown of domestic travel. According to the International Civil Aviation Organization (ICAO), these decisions resulted in a 79% decline in the number of tickets that were made available on a global scale during the second quarter of the year 2020. When the global impact of the pandemic on the aviation industry is broken down amongst the various continents, it becomes evident that although the majority of regions have implemented comparable measures to limit the outbreak, there are multiple reasons why the impact of the pandemic and the anticipated recovery timelines vary from region to region. As a consequence of the various lockdown and quarantine dates, low tendency to travel (anxiety), and border shutdowns, as well as the fact that each region's air connectivity,

infrastructure development, and regulatory affairs are distinct, the COVID-19 crisis has affected each region in a different manner (AfDB, African aviation recovery post Covid-19 report, 2020).

It is important to note that the continents that have the most established and relevant aviation sectors are the ones that are most affected in terms of revenue loss. This is connected to the fact that those continents also account for the majority of the industry's revenues and passengers. When looking at the relative decline in traffic by region, all of them show statistics in the range of 60-65% in terms of international travel (the only region whose results are below average is Asia-Pacific, because it was the first region to be affected by the virus). For domestic markets, the anticipated decrease in traffic in Africa is more severe than in other regions; it is forecast to reach roughly 60% percent of the total number of passengers, whereas in Europe or North America, it is likely to be 40 %. These results can be explained by the size of the South African domestic market, which is one of the most affected, as well as by the low maturity level of other domestic markets (AfDB, African aviation recovery post Covid-19 report, 2020).

In the African context, Airlines capacity for 2020 in Africa witnessed a decline down between 60% and 63% in contrast to originally intended levels (base line), according to the ICAO (Oct 2020). This, ultimately, indicates that for 2020 the African aviation sector lost roughly \$15B (\$8.6B for African registered airlines) in passenger revenue—without mentioning the terrible repercussions this loss may have in other sectors of the economy. This decline has generated an expected loss between 86 and 89 million passengers compared to what was initially forecasted to 2020, according to ICAO. Up until September 2020, availability of seats had a 51% year-on-year (YoY) fall whereas the most impacted months of 2020, which were the month of April, May and June,

witnessed a 75%, 78% and 81% tear – on - year decrease correspondingly in terms of seat availability (AfDB, African aviation recovery post Covid-19 report, 2020).

It has been determined that an individual analysis has been carried out for each of the African areas in order to evaluate the influence on air connectivity in Africa. When all traffic segments are taken into consideration, the regions that suffered the greatest damage at the onset of the pandemic were Eastern Africa and Southern Africa. Both of these regions saw capacity losses amounting to 90 percent in May, in comparison to the numbers for 2019. The capacity decreases in Northern, Central, and Western Africa were less severe, with the former experiencing a 76% drop and the latter experiencing a 70% drop. Over the course of the past five months, every region has been able to recover a portion of its seating supply; however, those regions that are more dependent on inter-continental trade have demonstrated a slower recovery trend in Northern Africa (AfDB, African aviation recovery post Covid-19 report, 2020).

The evaluation of the impact of COVID-19 on African airports was carried out by comparing the capacity of May and October 2020 with the performance of 2019. The findings of the analysis indicate that although African airports experienced seating-offer losses that ranged from 56% to 96% at the beginning of the outbreak, the majority of them have shown moderate signs of recovery as of October. When the figures are broken down by type of traffic served, the airports that are based on touristic traffic exhibit distinctive recovery profiles depending on the traffic inflows they receive. Zanzibar's initial impact was the smallest among the airports that were compared below, and its figure for October is one of the best, with Addis Ababa being the only airport having a higher figure (AfDB, African aviation recovery post Covid-19 report, 2020).

Through the utilization of critical document analysis, the research conducted by Nhamo et al. (2020) showed that the aviation industry came to a halt, resulting in losses that amounted to billions of dollars all over the world. Furthermore, COVID-19 led to the loss of jobs throughout the whole value chain of the aviation industry as well as in associated sectors. These job losses were a consequence of a number of factors, including but not limited to a decrease in passengers' income, cargo earnings, air ticket reimbursements, fixed expenses, and higher parking charges for halted planes.

Research findings have indicated that the dissemination of COVID-19 announcements has had a discernible impact on the stock returns of aviation companies. The study conducted by Martins and Cró (2022) investigated the immediate market response of the airline sector to the official classification of COVID-19 as a worldwide pandemic, as well as to the releases regarding the efficacy of COVID-19 vaccines within the United States. The researchers observed a statistically significant decline in market prices following the introduction of COVID-19 as a global pandemic, as evidenced by an event study analysis. In contrast, the researchers saw a favorable influence on the stock market as a result of the public disclosures of the efficacy of COVID-19 vaccines within the United States. The findings align with both the investor sentiment hypothesis and the asset-pricing approach. The empirical findings indicate that there is a greater stock market response to the disclosure of the Pfizer-BioNTech COVID-19 vaccine's efficacy in the United States, as compared to the subsequent vaccine efficacy announcements.

A study conducted by Atems and Yimga (2021) investigated the dynamic reactions of stock prices in the U.S. aviation industry in response to the impact of the COVID-19 pandemic. This study demonstrates that there is a significant negative impact on airline stock prices, with an immediate fall of 0.1 percentage point, in reaction to a 1% shock

caused by the COVID-19 pandemic. Furthermore, it is worth noting that the impact of the shock extends beyond the immediate day of its occurrence, as seen by a subsequent decline in airline stock values of up to 0.6 percentage points during a fifteen-day timeframe. The decline in airline stock prices in reaction to the COVID-19 shock cannot be attributed to an increase in airlines' variable expenses caused by COVID-19. Instead, it may be attributed to a reduction in air travel resulting from COVID-19, which subsequently leads to decreased income and stock prices for U.S. airlines.

Alam, Wei, and Wahid (2021) employed a 10-day window to analyze the occurrence of the formal declaration of the COVID-19 epidemic in Australia, which took place on 27 February 2020. The study's results indicate that at the day of the announcement, the indices pertaining to food, pharmaceuticals, and healthcare demonstrate notable and favorable increases in value. Subsequent to the announcement, the telecommunications, pharmaceuticals, and healthcare sectors indicate favorable performance, whilst the transportation business exhibits subpar performance.

In their study, Chebbi, Ammer, and Hameed (2021) conducted an analysis to investigate the impact of the COVID-19 pandemic on the stock liquidity of companies listed in the S&P 500 index. A daily dataset was created encompassing stock liquidity, as well as the reported cases and deaths related to COVID-19, spanning from 1 January 2020 to 31 December 2020. The regression analysis yielded findings indicating a statistically significant inverse association between COVID-19, as indicated by the daily increase in the counts of cases and fatalities, and stock liquidity. This suggests that the occurrence of the COVID-19 pandemic has an adverse impact on the liquidity of firms.

The study conducted by Zhang, Gao, and Li (2021) examined the influence of stock liquidity on business value during the COVID-19 epidemic. The firm value of

Cumulative Abnormal Returns was estimated using data obtained from A-share listed businesses in China. This calculation was performed through the event study approach. Additionally, the stock liquidity was assessed using the Amihud illiquidity measure. The researchers discovered that during the initial three days of the COVID-19 epidemic, there were notable adverse associations between stock liquidity and company value. However, in the subsequent day, significant positive associations were reported.

The impact of COVID-19 on stock liquidity and stock returns has been extensively studied, although there remains a dearth of knowledge regarding its effects on aviation firms in developing regions, namely in Kenya. Hence, the objective of this study was to evaluate the impact of the Covid-19 announcement, specifically in terms of cases and deaths, on the stock returns of Kenya Airways. Additionally, this study aimed to examine the potential mediating role of stock liquidity in this relationship.

### **1.1.1 Kenya airways**

Kenya Airways Limited was established in 1977 following the dissolution of East African Airways, which was a jointly owned airline. When the government made its initial effort toward privatization in 1986, the airline continued to function as a government-owned establishment until that year. The transformation that has taken place at Kenya Airways since 1991 is an example of a specific type of sequencing. According to the chronology, the beginning of an endeavor to restructure Kenya Airways operations was foreshadowed by the appointment of Philip Ndegwa as Chairman of Kenya Airways in the year 1991. A number of new initiatives were implemented, such as the hiring of outsiders to fill the positions of Managing Director and Chief Financial Officer, the redefining of middle level managerial jobs and the reduction of overall employment costs, the review and reduction of capital

expenditures, and the implementation of an innovative form of training for staff members with a focus on excellent customer service and total management of quality.

In addition, negotiations with the government were conducted over a program for the restructuring of debt. In order to transform Kenya Airways into a financially stable corporation that could entice private investors, it was necessary to implement this debt restructuring package. The major operational and financial restructuring that was described earlier was followed by the privatization of Kenya Airways. The final agreements with creditors under the debt restructuring package were reached in July of 1995, which was more than four years after the beginning of the operational restructuring initiative for Kenya Airways. As soon as the conditions were favorable, the privatization process was carried out in a relatively short amount of time. By June 1996, Kenya Airways had a strategic partner in KLM that had a significant ownership portion of 26%, additional foreign and domestic portfolio investors, and more than 100,000 individual domestic shareholders. There was a decrease in the percentage of state ownership to 23%. At the moment, Kenya Airways is one of the most prominent airlines in the world, and it provides flights to a considerable number of destinations throughout the globe. Additionally, the company has entered into a number of strategic agreements with major airlines throughout the world, which have all contributed to the enhancement of its network and the connectivity it provides to passengers.

KQ reported an operating loss of Ksh.5 billion for the first six months of 2022, which represents a drop of 31.5 percent in operating losses over the course of the previous year. If the higher fuel costs that were observed during this time period had not occurred, KQ would have been able to declare an operational profit that was positive. KQ is currently in a position to meet its operational expenditures (with the exception of

financing and legacy costs), which has been encouraged by the rebound in post-COVID-19 sales. KQ continues to have the highest cost base among all airlines operating in the Sub-Saharan Africa region due to the fact that it has a negative equity position. This is despite the fact that some of the financial indicators have recently shown signs of improvement.

Over 55 countries around the world are served by Kenya Airways' operational network. Kenya Shilling is the primary currency that is used in the preparation of the company's accounting. But the majority of the income are governed by the United States dollar. The Euro, the Great Britain Pound, and the South African Rand are some of the supplementary main currencies. Because the majority of ticket sales in African countries are conducted in the individual country's primary currency, these countries are vulnerable to the dangers associated with foreign exchange. When monies are transferred and repatriated from all of the global locations to the primary account in the head office, there are additional risks that are linked with this process. There is also the possibility that the company would suffer a financial loss as a result of the devaluation of the local currency, as is the case in cases such as Zimbabwe and Mozambique, amongst others. As a result of the prevalent lack of financial liberalization in the majority of African nations, the company may also be vulnerable to repatriation risks, which are situations in which it is not possible to move cash from the overseas site. If these issues are not addressed by appropriate financial management, there is a high probability that a financial loss may occur. Being a national carrier, it is expected the advent of Covid 19 adversely affected the airline and as such effect is likely to have spilled over to not only key sectors linked to aviation industry such as tourism but also affected other airlines operating in Kenyan airspace. There, based on this realization,

the examination into the effect of the pandemic to performance of the airlines is deemed essential.

## **1.2 Statement of the Problem**

The pandemic caused by COVID-19 momentarily halted the demand for air travel, which had long-term repercussions for all of the industry stakeholders involved. A review at the effects of COVID19 on the aviation industry posit that existing research evidence has been on operational dimensions such as delayed flights, reduced number of passengers, flights cancellation among other operational related effects.

Many airlines closed in March 2020. The COVID-19 pandemic has also made operations recovery unclear and slower than the SARS pandemic (Suau-Sanchez et al., 2020; International Air Transport Association (IATA, 2021a). The COVID-19 pandemic reduced global passenger demand, calculated in revenue passenger kilometres (RPKs), by 65.9% in 2020. Airlines lost 68.9% of their revenue, or USD418 billion, due to this demand drop. According to the IATA Outlook (2021b), airlines lost USD126.4 billion in 2020, the biggest in industry history. In April 2020, border closures and strict quarantine regulations left up to 66% of the global commercial air transport fleet inoperable (IATA, 2021). The COVID-19 epidemic reduced airline capacity by 40% from available seats. The number of airline passengers fell 49%. Airline gross passenger operating revenues fell by USD 324 billion due to this drop (ICAO, 2022). This crisis is worse than the 2008 economic downturn, when the aviation industry lost USD30 billion, ending a decade of profitability. COVID-19's long-term effects on the global air transport business tend to be particularly striking in the international market, which is a major revenue source for airlines. International Air Transport Association (IATA, 2021) revenue passenger kilometres show a tremendous increase in worldwide air travel. Air traffic has plummeted due to the COVID-19 epidemic. The viability of

several sector players, particularly flag carriers and international hub airports, has worried policymakers. Numerous governments worldwide have provided financial and non-financial aid to aviation to increase its role in global trade and the employment market. Thus, concerns about air transport industry competitiveness and equity have arisen.

Recent research (Oliyide et al., 2021; Heyden and Heyden, 2021; Akhtaruzzaman, 2021; Salisu, 2021; Fasanya, 2021c) shows that stock markets respond to COVID-19 pandemic news. Additionally, the COVID-19 pandemic has increased stock market uncertainty, lowering stock returns (Oliyide et al., 2021; Padhan & Prabheesh, 2021). Stock prices were significantly affected by the COVID-19 pandemic, according to Ramelli and Wagner (2020). The authors examined how financial markets react to new hazards, finding that the health crisis has become an economic disaster. The aggregate market has performed poorly since the epidemic, and financial channels have exacerbated this. COVID-19 has caused considerable stock return swings (Oliyide et al., 2021; Periola-Fatunsin, 2021). It negatively impacts stock market returns (Padhan and Prabheesh, 2021; Heyden and Heyden, 2021). COVID-19 increases stock market contagion and crash risk (Akhtaruzzaman et al., 2021; Liu, 2021). The Akhtaruzzaman et al. (2021) study examined China-G7 financial contagion. According to Al-Awadhi et al. (2020), Chinese stock returns negatively correlate with daily COVID-19 cases and mortality. Heyden and Heyden (2021) examined US and European stock market responses to the COVID-19 pandemic onset.

Stock markets fluctuate a lot. Information about COVID-19 affects these variations, creating unequal dependence. Returns fall between the middle and upper quantiles (Cepoi, 2020). According to Ngwakwe (2021), share prices rose significantly during the vaccine's launch. This trend was seen in the Dow Jones, Shanghai, S&P, FTSE, and

EURONEXT. According to Martins and Cró (2022), US COVID-19 vaccination efficacy disclosures boosted the stock market. As noted by Heyden & Heyden (2021), share prices dropped after the first mortality in a country. The early government reaction focused on virus containment to slow the outbreak. This strategy included screening foreign visitors and encouraging self-isolation. However, there exists scanty empirical evidence on the effects of covid – 19 pandemic on the stock performance of the aviation industry from a developing country is largely missing especially in Kenya. This is despite the crucial role the industry plays in connecting international markets. Therefore, this study sought to fill in this research gap by analysing how COVID 19 information affected Kenya Airways stock returns, and the mediating role of stock volatility.

### **1.3 Study Objectives**

The study objective was to determine the mediating effects of stock liquidity on the relationship between COVID19 announcements on the Kenya Airways stock returns.

Specifically, the study sought:

- i. To determine the effect of cumulative COVID19 infections on the Kenya Airways stock returns.
- ii. To examine the effect of cumulative COVID19 deaths on the Kenya Airways stock returns.
- iii. Examine whether stock liquidity mediates the relationship between:
  - a) Cumulative Covid 19 infections and Kenya Airways stock returns.
  - b) Cumulative Covid 19 deaths and Kenya Airways stock returns.

#### **1.4 Research Hypothesis**

The study was guided by the following study hypotheses:

**H<sub>01</sub>** Cumulative COVID19 cases announced do not significantly affect Kenya Airways stock returns.

**H<sub>02</sub>** Cumulative COVID19 death announced does not significantly affect Kenya Airways stock returns.

**H<sub>03</sub>**: Stock liquidity does not mediate the relationship:

- a) Cumulative Covid 19 infections and Kenya Airways stock returns.
- b) Cumulative Covid 19 deaths and Kenya Airways stock returns.

#### **1.5 Significance of the Study**

The study is significant to the aviation industry stakeholder in quantifying the actual effect Covid19 pandemic had on the industry from the financial markets performance perspective. To this regard, the study is crucial in providing the empirical evidence on how the adverse effect of the pandemic was captured in the financial markets. Given that financial markets are driven by news, the study may provide an empirical evidence on how the pandemic shocked the markets thus providing an objective evaluation of effect of the pandemic from financial markets point of view. This deviates from other existing evidence on how the pandemic affected the aviation industry with the existing evidence looking at the effects from the operations perspective such as delayed flights, reduced number of passengers, and flights cancellation among other operational related effects. This may therefore be crucial in policy pronouncements for future shocks from the financial markets perspective.

Secondly is the significance to the existing body of literature. The study may be an addition to the existing body of empirical literature especially in the Kenyan context where the empirical evidence is scanty at best. The existing information tends to incline more on the operational perspective with the linkage to the financial markets missing at all. Therefore, by introducing the financial markets effects perspective, the study brings in an additional different set of evidence to this regard. The findings of the results could therefore be generalized to a large extent for the other firms listed at the Nairobi bourse. Further, the study would be an eye opener on the other future studies on how Covid 19 affected financial markets or performance of other listed firms from the perspective of firm market value, book value among other firms' performance indicators at the capital markets.

### **1.6 Scope of the Study**

The study focused on the impact of COVID 19 announcement on aviation industry stock returns. Specifically, a case study of Kenya Airways was undertaken. Regarding performance, the study focused on the stock market performance for the industry with the target being the share prices. The study period was March 2020 – July 2020.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Overview**

This chapter provides a comprehensive overview of the literature pertaining to the research variables addressed in the study. It encompasses an examination of the theoretical literature that forms the foundation of the investigation, a review of relevant empirical literature, and an exploration of the conceptual framework.

#### **2.1 Review of Concepts**

##### **2.1.1 Covid 19 Pandemic**

The COVID-19 pandemic, alternatively referred to as the coronavirus pandemic, encompasses an extensive worldwide emergence of the newly identified coronavirus ailment COVID-19 (Burdorf, Porru & Rugulies, 2020). The virus responsible for the pandemic was SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2), a novel coronavirus strain that was initially detected in December 2019 in the Chinese city of Wuhan, located in the province of Hubei (Park, 2020).

According to Wells *et al.*, (2020), Governments enacted various measures, including lockdowns and travel restrictions, to curb the virus's spread. The pandemic's impact extended beyond public health, causing economic disruptions, remote work trends, and highlighting societal inequalities. Vaccination campaigns aimed to mitigate the crisis, but challenges such as vaccine distribution, misinformation, and the emergence of virus variants underscored the complexity of the situation. The pandemic serves as a stark reminder of global interconnectedness, the importance of preparedness, and the resilience of communities in the face of unprecedented challenges (Coen, 2023).

The interrelated concepts of COVID-19 reported cases, the number of COVID-19 vaccinations, and the count of overseas arrivals form a triad of critical indicators that collectively define the pandemic's multifaceted impact (Stobart & Duckett, 2022). COVID-19 reported cases represent the tangible manifestation of the virus's spread within communities, offering insights into its reach, virulence, and geographical variations (Salama, 2020). Concurrently, the tally of COVID-19 vaccinations encapsulates global efforts to mitigate the crisis, reflecting the progress made in inoculating populations against the virus, lessening its severity, and gradually curbing its transmission (Ndwandwe & Wiysonge, 2021). In this context, the number of overseas arrivals serves as a barometer of cross-border movements, offering a lens into international travel's resurgence or stagnation as nations navigate the delicate balance between economic recovery and health security (Moosa & Khatatbeh, 2021). The tripartite interaction of reported cases, vaccinations, and overseas arrivals underscores the pandemic's complex dynamics, shaping public health responses, policy decisions, and socio-economic trajectories on a global scale.

The COVID-19 pandemic triggered significant fluctuations in industry share prices worldwide (Mishra & Mishra, 2021). As the virus spread globally, lockdowns, travel restrictions, and supply chain disruptions led to widespread uncertainty, causing stock markets to experience extreme volatility (Prajapati, 2023). Industries directly impacted, such as travel, hospitality, and retail, saw sharp declines in share prices due to reduced demand and operational limitations (Abubakar, 2020). Conversely, sectors like technology and online retail experienced gains as remote work and digital consumption surged. Government responses, fiscal stimulus, and vaccine developments played pivotal roles in influencing market sentiment. The pandemic underscored the interdependence of economic factors and public health, ultimately reshaping

investment strategies and highlighting the resilience of businesses in adapting to unprecedented challenges (Cevik, *et al.*, 2022).

### **2.1.2 Industry Stock Returns**

Industry share prices represent the market value of companies operating within specific sectors of the economy (He *et al.*, (2020). These prices are determined by various factors, including a company's financial performance, growth prospects, industry trends, macroeconomic conditions, investor sentiment, and broader market dynamics. The share prices of companies within the same industry often move in tandem due to shared factors affecting the sector. Changes in industry share prices can reflect shifts in investor confidence, industry-specific developments, technological advancements, regulatory changes, and overall economic health (Li, Wu & Wang, 2020). Analysing industry share prices provides insights into market trends, investor perceptions, and the relative strength or weakness of different sectors within the economy. The COVID-19 pandemic had a profound impact on industry share prices, creating a dynamic landscape of winners and losers (Fei & Zhang, 2023). In the early stages of the pandemic, industries such as travel, tourism, and hospitality experienced significant declines in share prices as lockdowns and travel restrictions severely curtailed consumer activity (Alsamhi *et al.*, 2020). Airlines, cruise lines, and hotels saw their stocks plummet as revenue streams dried up, leading to a decrease in investor confidence.

Conversely, industries aligned with remote work, technology, e-commerce, and healthcare witnessed a surge in share prices (Modgil *et al.*, 2022). Companies offering remote communication tools, online shopping platforms, and telemedicine services experienced increased demand, leading to robust revenue growth and heightened investor interest. The pandemic accelerated trends like digital transformation and e-commerce adoption, causing tech giants and online retailers to reach record-high share

prices (Chandra, Dutta & Yeh, 2022). However, the overall market sentiment remained highly sensitive to developments related to vaccine distribution, government stimulus packages, and shifts in consumer behavior, highlighting the complex interplay between economic fundamentals, public health considerations, and investor sentiment during a global crisis.

### **2.1.3 Stock Liquidity**

Stock liquidity is a fundamental concept in financial markets that describes the ease with which a particular stock or asset can be bought or sold without significantly affecting its price (Chebbi, Ammer & Hameed, 2021). It is a measure of how quickly and efficiently an asset can be converted into cash. Highly liquid assets, such as blue-chip stocks or major currency pairs, can be bought or sold in large quantities with minimal price impact because there is a significant number of buyers and sellers actively participating in the market. On the other hand, assets with low liquidity, like small-cap stocks or obscure securities, can experience price fluctuations when trades are executed, as there may be fewer market participants willing to buy or sell them (Berglund, 2020).

Liquidity is vital for investors and traders, as it affects their ability to enter or exit positions at desired prices. Moreover, it also plays a crucial role in risk management, as low liquidity can result in wider bid-ask spreads, making it costlier to trade, and potentially leaving investors stranded in positions they can't easily unwind. It is important to note that market conditions, news events, and the overall economic environment can influence liquidity, making it a dynamic factor in financial markets (Boubaker, Gounopoulos & Rjiba, 2019).

## **2.2 Review of Theories**

### **2.2.1 Information Asymmetry Theory**

This study is anchored mainly on the information asymmetry theory. The agency theory (Jensen & Meckling, 1976) and adverse selection cost (Akerlof, 1970) are the foundations of the information asymmetry hypothesis put forth by Barclay and Smith in 1988. Because managers (agents) are more knowledgeable than shareholders (principals), the theory holds that stock repurchases impair market liquidity. Market makers consequently found themselves engaging in trade with insiders who knew more. In accordance with some organizational restrictions, managers are assumed by Barclay & Smith (1988) to behave in their own best interests. Additionally, they believe that management will profit from shareholders' spending if the chance arises. For instance, if remuneration packages contain stock options for employees, managers will have a private motive to purchase back shares and can thereby benefit from their better knowledge.

The study applies the theory to demonstrate whether or not stock price volatility is reduced or increased by the availability of information particular to COVID-19. It is examined from the perspective of the corporation using the notion of information asymmetry (Chen et al., 2001; Yuan, 2018). The public and investors can communicate with listed firms through their information disclosure. Periodic reports and transient announcements are examples of these. Such information can be utilized as the major foundation for investment decisions once investors and the general public have access to them. However, the company's information disclosure may overstate good information or conceal bad information due to information asymmetry or the presence of conflicts of interest.

Exaggerated disclosure of good news can also include excessive publicity for legal compliance (Li, 2010; Solomon, 2012), in addition to misleading disclosures that are illegal under the law (Schrand & Walther, 2000). For instance WuChan ZhongDa (600704), whose primary business has nothing to do with medicine, announced publicly on February 13, 2020 that they will soon create COVID-19-specific medication. The announcement's falsity was later confirmed on March 1, 2020 by the Shanghai Stock Exchange. Since that time, as can be seen, the value of the company's stock has drastically decreased. WuChan ZhongDa (600704) is acting in a way that exaggerates the favorable information that has been disclosed about a medication that is specifically for COVID-19.

People and investors alike are highly concerned about specialized medications, vaccines, and other anti-epidemic measures during the COVID-19 epidemic. As an illustration, investors are eager to purchase the shares in this scenario if a company discloses that it is associated with the COVID-19 specific drug. It will, however, have a detrimental effect on the company's stock price once they learn the story is overblown. This procedure is comparable to a business concealing bad news. The principal-agent problem, which arises when the interests of shareholders and managers are not entirely compatible, causes managers to pursue their own interests as a result of information asymmetry. Thus, the stock price will decrease as a result of the executives stockpiling bad news (Jin & Myers, 2006; Kim *et al.*, 2011; Piotroski *et al.*, 2015; Fu *et al.*, 2021). The company's stock price will be greater than the company's value when excessive positive information disclosure surpasses the company's threshold for its value due to information asymmetry (Zhao *et al.*, 2020; Solomon, 2012). The stock price of the company will suffer whenever the stock price bubble reaches a particular level and increases the likelihood of a stock price crash.

## **2.3 Empirical Review**

### **2.3.1 Covid 19 Cumulative Announced Cases on Stock Returns**

Several studies have been undertaken on how the Covid 19 pandemic affected the share prices. Using daily data, Christopoulos et al. (2021) investigated how the COVID-19 pandemic affected the volatility of oil prices and how stock market volatility affected oil price volatility. An application of a general econometric panel model was made in order to study the connection between COVID-19 infection and the announcement of deaths in relation to the volatility of oil prices. The research report analyzed data from six different geographical zones, namely Europe, Africa, Asia, North America, South America, and Oceania, for the period beginning on 21 January 2020 and ending on 13 May 2021. The empirical findings revealed that COVID-19 deaths had a considerable impact on the volatility of oil prices. A second step of investigation that was conducted individually for each geographical location demonstrated that this finding is correct. Asia stood alone among regions globally in which it was not possible to confirm the existence of a correlation between the rate of mortality increase and the volatility of crude oil prices. In conjunction with economic and market unpredictability, the study's results unequivocally established that COVID-19 represents a novel risk factor that influences oil price volatility. In general, our findings were helpful for those who set policy, particularly in the event that there would be a fresh wave of infections and fatalities in the future.

A study was conducted by Maneenop and Kotcharin (2020) to analyse the effects of the Covid-19 pandemic on the international airline sector. Using event study methodology, this research aimed to assess the immediate effects of the 2019 novel coronavirus (Covid-19) pandemic on 52 publicly traded airlines worldwide. The study's findings indicate that the decline in airline stock returns following three significant Covid-19

announcements is more substantial than the decline in market returns. As a whole, the responses of investors to the three designated events vary. The period following the official announcements made by the World Health Organization and President Trump elicits the most pronounced overreaction. Moreover, traders in Western nations are more receptive to recent information than those in other regions, as confirmed by the findings. The results emphasize the need for prompt policy development to mitigate the repercussions of the pandemic on the global airline industry.

Zhang, Zhu, and Hao (2022) conducted an analysis on the airline industry in China as a result of the Covid-19 pandemic. This study collects high-frequency data on share prices of six sample airline companies (including both full-service and low-cost airlines) in China over 519 trading days, from August 1, 2019 to September 15, 2021, and uses the Quandt-Andrews test to identify structural change points for each company's stock price. The research approach is based on a novel perspective on heterogeneous airline service models. According to the study's results, the pandemic caused substantial and abrupt fluctuations in the share prices of all Chinese airlines. However, the sequence of these abrupt changes varied by sector, with full-service airlines undergoing structural changes considerably earlier than low-cost airlines. Additionally, the effect of the pandemic on airline share prices differs by type, with the majority of low-cost airlines experiencing a substantial positive impact while full-service airlines experience a negative impact.

Fasanya, Periola, and Adetokunbo (2023) investigated the impact of COVID-19 reported cases on the performance of stock prices. From January 1, 2020 to December 3, 2021, the data included stock market indexes, financial volatility, crude price volatility, and COVID-19. The data was updated daily. The COVID-19 information was acquired from DataStream and WHO. The stock market indexes utilized in this study

are the S&P 500 for the United States, the Shanghai SE index for China, the CAC 40 index for France, the FTSE MIB for Italy, and the financial volatility (OVX) and oil price volatility (VIX) for the Chicago Board Options Exchange (CBOE) and DataStream, respectively. The research findings indicate that the impact of COVID-19 cases on stock prices is relatively limited and varies across countries.

An evaluation of the relationship between fluctuations in the sectoral stock markets of the United States and the returns of the newspaper-based infectious maladies tracking index (ITI) established by Baker et al. (2020) was presented in a study by Alomari et al. (2022). The results of their investigation, spanning from 1985:01 to 2020:03, indicated that in the majority of sectors, there is a negative (positive) correlation between returns and ITI at lower (higher) return quantiles (which represent different market conditions). This association was determined to be negative across the board for every quantile in the health care industry. It is noteworthy to mention that the incorporation of the COVID-19 era into the sample data resulted in the identification of a more robust correlation for lower quantiles across all industries. An asymmetric relationship was identified between returns and the ITI in the consumer staples, healthcare, industrial, and technology sectors under a diversity of market conditions. According to the results of a rolling regression, the magnitude of responses to various infectious diseases has fluctuated in an inconsistent manner over time. The implications of their findings for investment strategies pertaining to sectoral returns in the United States when infectious disease news is present were substantial.

Liu et al. (2020) conducted a study to assess the immediate consequences of the coronavirus pandemic on 21 prominent stock market indices in major countries impacted by the crisis. The United States of America, Japan, Korea, Singapore, Germany, Italy, and the United Kingdom were among these nations. According to the

findings of their investigation, there are repercussions of infectious disease on financial markets all over the world. They used a method called an event analysis, and the findings suggested that after the emergence of the virus, share prices in the key afflicted countries and territories dropped swiftly. When compared to other countries, the Asian countries had a greater number of negative anomalous returns. Further panel fixed effect regressions revealed that confirmed cases of COVID-19 have a negative impact on the abnormal returns of stock indices via an effective channel. This objective was achieved through the integration of investors' pessimistic outlook regarding future returns and concerns regarding uncertainty.

Chen et al. (2007) report that during the 2003 SARS outbreak, the earnings and stock prices of seven Taiwanese-listed hotel companies declined significantly. The authors have documented this. Additionally, Chen et al. (2009) state that the tourism, wholesale, and retail sectors were significantly impacted negatively by the advent of the SARS epidemic on Taiwan's economy. Chen et al. (2013) provide evidence in an independent study that the stock returns of companies operating in the basic materials industry sector in Hong Kong and the service industry sector in the Philippines were influenced by the SARS outbreak. The stock prices of publicly traded corporations with operations in West African countries were substantially impacted by the Ebola pandemic, according to the research of Ichev and Marin (2018).

According to a study by Al-Awadhi et al. (2020), the profitability of stocks belonging to firms included in the Shanghai Stock Exchange Composite Index and the Hang Seng Index is significantly impacted by the daily increase in positive cases and negative fatalities attributed to COVID-19. They discovered that this is a significant influence. Alber (2020) suggests that the sensitivity of stock market returns to COVID-19 instances is greater than that of returns to fatalities. The individual's investigation

integrates data from several nations, Spain, Italy, Germany, France, and China, among others. Likewise, Corbet et al. (2020) provide evidence that the revelation regarding the presence of COVID-19 had a significant adverse impact on the hourly returns of stocks and substantially amplified their hourly volatility. Likewise, Liu et al. (2020) provide evidence that in the aftermath of the COVID-19 pandemic, the majority of affected nations experienced a significant decline in their stock markets. Notably, Asian countries were hit harder by negative anomalous returns compared to other regions.

### **2.3.2 Covid 19 Cumulative Death Announced on Stock Returns**

In their study, Abdelrhim and Elsayed (2020) sought to investigate the impact of the widespread transmission of COVID-19 on international e-commerce enterprises. The selection of the five largest e-commerce companies in the world was based on their revenues and market valuation. These companies are: Amazon.com Inc., Alibaba Group Holding Limited, JD.com Inc., Alibaba Group Holding Limited, and Alibaba Group Holding Limited. Amazon.com, Alibaba, Rakuten, Zalando, and ASOS have all achieved significant success as e-commerce platforms in their respective countries: the United States, China, Japan, Germany, and the United Kingdom. By computing the "cumulative infections" and "cumulative deaths" on a daily basis, we may ascertain the prevalence of the Corona virus. The dependent variable represents the response of the worldwide e-commerce market to the influence of the corona virus outbreak. It is quantified by the daily financial returns of e-commerce enterprises in the global market. Furthermore, it is assessed based on the daily figures for both "new cases of the novel coronavirus" and "new fatalities caused by the novel coronavirus". This activity was performed daily between March 15, 2020 and May 25, 2020. The descriptive analysis of the e-commerce companies' returns showed that, on average, the companies generate positive daily returns when computing the average daily returns. The aggregate model

and the Beta Standardized Coefficients test indicate that the following independent variables have a significant impact on the returns of shares in global electronic trading companies: The variable "total deaths" had the highest degree of influence, ranking first. The variable "total cases" had the second highest degree of impact, ranking second. The variable "new cases" had the third highest degree of impact, ranking third. The impact of the coronavirus outbreak differed among companies, contingent upon the country to which they were affiliated. The American corporation Amazon and the United Kingdom company ASOS were identified as the most influential examples of infection, which aligns with the fact that both countries were the most severely impacted by the coronavirus throughout the research period. Conversely, the impact of the Chinese corporation Alibaba and the Japanese company Rakuten on "Coronavirus cases" was minimal.

In their study, Alber and Saleh (2020) sought to examine the consequences of the global spread of COVID-19 in 2020 on the stock markets of GCC nations. The assessment of the coronavirus transmission was conducted by considering the overall count of cases, the count of newly reported cases, the total number of fatalities, and the cumulative count of deaths. The assessment of the coronavirus spread is based on the per capita figures, while the measurement of stock market performance relies on fluctuations in the stock market index. Throughout the study period, the findings revealed distinct and significant variations in the behavior of several stock market indices. Furthermore, it seemed that fluctuations in the stock market were responsive to the emergence of fresh fatalities resulting from the Coronavirus. Furthermore, this validation specifically pertains to the month of March, with no indication of the likelihood of these impacts occurring in April or May of 2020.

In a study conducted by Pyo (2021), the researcher examined the impact of the number of coronavirus infections on the fluctuation of stock returns and its influence on regime switching. The research provided empirical evidence demonstrating that COVID-19 cases had an uneven effect on the volatility of market returns. As the number of cumulative incidents increases, the likelihood of shifting from a low volatility regime to a high volatility regime on the next trading day also increases. High volatility is correlated with an increased risk of financial loss for investors. Conversely, under the high volatility regime, the impact of cumulative cases on the transition probability lacks statistical significance. This occurs because, in this particular context, the transition probability exhibits a heightened sensitivity to minor alterations. The study also documented the evidence that the government's actions to combat the pandemic played a role in fostering the period of high instability in the KOSPI stock market index while they were implemented during the outbreak. Furthermore, the study conducted a Monte Carlo simulation to forecast future stock prices. These projections were derived using the estimated parameters and the anticipated number of new COVID-19 cases.

In their 2021 publication, Algamdi et al. examined the impact of global death cases on investor concerns and anxiety, and how this exacerbated the volatility of crude oil prices in financial markets. Until January 22nd, the response was capable of slowly assimilating the pathogen. However, the market experienced a rapid change, resulting in a steep decline in prices, which was then followed by a slow recovery in prices until June 14. The results of this study were obtained using an econometric model known as the ARDL (Autoregressive Distributed Lag). The model was built using the Gets technique and applied to daily data spanning from January 22, 2020, to June 14, 2020. Their autoregressive distributed lag (ARDL) analysis revealed that the mortality rate has a significant negative effect on the fluctuations of the oil price. Conversely, the

mortality rate had an indirect impact on the instability of crude oil prices. Based on the research, the mortality rate of COVID-19 significantly impacted the oil prices in Saudi Arabia (KSA). The scenario stated in the United States had a substantial influence on the preliminary findings. Upon assessing the situation abroad, it became evident that the COVID-19 death toll had a favorable impact on oil prices. Consequently, they emphasized the heightened risks associated with death-related factors in both the financial market and the real economy. These risks were attributed to the increased uncertainty in the United States resulting from economic policies. The confusion arose because to the higher mortality rate associated with the condition.

Ashraf (2020) conducted a study examining the repercussions of the COVID-19 pandemic on the financial market. The researchers analyzed the daily data on confirmed COVID-19 cases and deaths, as well as stock market returns, from 64 nations between January 22, 2020, and April 17, 2020. They discovered that the stock markets had a negative response to the increase in confirmed COVID-19 cases. Put simply, the stock market experienced a decline in returns as the number of confirmed cases rose. Furthermore, they found that the stock markets had a more favorable reaction to the increase in the number of confirmed cases compared to the increase in the number of deaths. Based on their data, the market experienced a significant negative response in the days immediately following the announcement of verified instances, as well as between 40 and 60 days after the initial confirmed cases. Overall, their research demonstrated that financial markets exhibit rapid responsiveness to pandemics induced by COVID-19, with this reaction evolving over time and varying according to the phase of the outbreak.

Udejaja and Isah (2022) examined how African stock markets responded to different stages of the COVID-19 pandemic. They analyzed daily panel statistics from January

5, 2015 to January 28, 2021. The phases encompass the pre-COVID era, the epidemic phase, and the pandemic phase. It was disclosed that during the various stages of the COVID-19 pandemic, South Africa emerged as the leading country in Africa in terms of both the highest number of confirmed cases and deaths caused by COVID-19. This was true irrespective of the commencement of the pandemic. Despite Morocco and Tunisia having the second and third highest number of COVID-19 cases, Egypt had the second highest number of COVID-19 deaths. Amidst the COVID-19 pandemic, they utilized a PMG-based panel-ARDL model to offer evidence-based insights into the behavior of stock markets. They established that the decline in stock returns in Africa during the pandemic phase of the COVID-19 epidemic was primarily attributed to the number of confirmed illnesses rather than the number of deaths. Conversely, the research suggests that the decrease in stock returns during the COVID-19 epidemic phase is mostly associated with fluctuations in global oil prices and currency rates. However, it is important to consider whether the success of measures to mitigate the detrimental impact of COVID-19 on stock returns can be evaluated without taking into account whether the focus was on the number of confirmed cases or the number of confirmed deaths.

In their study, Baek, Mohanty, and Glambosky (2020) investigated the impact of COVID-19 on the US stock market by examining the effects of volatility transmission. Using the BEKK-multivariate GARCH model, they found that the volatility of the US stock market is influenced by both its own past shocks and past shocks related to COVID-19. Furthermore, it was found that the mortality rate, which signifies negative news, had a beneficial effect on the instability of the US stock market, but the rate of recovery, which signifies positive news, had an adverse effect on the instability of the US stock market. Furthermore, they found that COVID-19 had an uneven and

disproportionate effect on the volatility of the US stock market. Consequently, the adverse news exerted a considerably greater impact on the present US stock market compared to the positive news. The fixed effect panel regression findings have verified the presence of volatility spill over effects.

Albulescu (2020) investigates the correlation between COVID-19 and stock market volatility in the United States. The study reveals that an increase in the global number of new cases and the fatality ratio leads to higher levels of volatility in the stock market. The author utilized data extracted from the WHO status reports, specifically focusing on COVID-19 statistics. Additionally, the author accessed the S&P Dow Jones Indices database and employed the Ordinary Least Squares (OLS) method.

By analyzing high-frequency daily data from January 14 to August 20, 2020, encompassing 53 emerging countries and 23 developed countries, we have discovered that the occurrence of COVID-19 cases and deaths has a negative impact on stock returns. Additionally, it leads to an increase in both volatility and trading volume. In their study, Mensi and Kang (2023) aimed to examine the ability of COVID-19 deaths and confirmed cases to predict changes in the S&P 500 index (in the United States), the CAC30 index (in France), the BSE index (in India), two strategic commodity futures (West Texas intermediate [WTI] crude oil and Gold), and five main uncertainty indices (Equity Market Volatility Ticker [EMV], CBOE Volatility Index [VIX], US Economic Policy Uncertainty). Furthermore, the authors examined the impact of uncertainty indices, together with COVID-19 deaths and confirmed cases, on the price returns of several asset classes such as crude oil, gold, and stocks (S&P500, CAC300, and BSE). To achieve their objectives, the authors utilized the wavelet coherency method and the quantile regression strategy. The findings demonstrated unequivocal evidence of

interdependencies occurring across various levels of magnitude among the variables under investigation. The lead-lag connections vary according to the frequency. To summarize, the COVID-19 news strongly reflects the levels of uncertainty at specific time intervals for various indices such as EPU, EMV, VIX, OVX, and GVZ from January to April 2020. These time intervals range from 4 to 16 days and 32 to 64 days. Throughout the specified time frame, the S&P 500, CAC 30, and BSE indices, along with gold prices, exhibited a synchronized movement with COVID-19 news, but at a low frequency. Conversely, there was a moderate association detected at low frequency between COVID-19 news and WTI oil. Ultimately, the profits from stocks and commodities are vulnerable to fluctuations in market circumstances and are influenced by different measures of uncertainty.

Alfaro et al. (2020) discovered that COVID-19 has a detrimental impact on the returns of U.S. stocks. Ashraf (2020) examines the impact of COVID-19 on the stock market performance across 64 nations. The analysis reveals a negative correlation between stock returns and the rising number of confirmed COVID-19 cases. In their study, Khatib and Nour (2021) examine the impact of COVID-19 on the link between the attributes of effective corporate governance and the performance of a specific group of Malaysian firms.

They demonstrate that the COVID-19 pandemic has impacted the financial performance of companies, as well as their ability to meet short-term obligations, distribute dividends, and the framework of their corporate governance. Zaremba et al. (2021) analyze the daily data from January to April 2020 for a total of 49 countries. Due to the COVID-19 epidemic, the closure of schools and workplaces led to a decrease in liquidity in emerging markets. Rahman et al. (2021) investigate the reactions of the Australian stock market to the uncertainty resulting from the outbreak. The stock

market responded unfavorably to the introduction of COVID-19. They also indicate that the number of enterprises and the liquidity of those firms are two major factors that influence abnormal returns.

#### **2.4 Mediating role of Stock Liquidity**

Using data obtained from the New York Stock Exchange on a daily basis from 1928 until 1987, Gallant, Rossi, and Tauchen (1992) carried out an in-depth study of the association between price movement and volume movement. The study was conducted from 1987 until 1992. They modified the data in order to take into account long-term patterns as well as well-known calendar factors. This was done in order to fulfil their objective. A semi nonparametric estimate of the joint density of current price change and volume was utilised by them in order to provide a description of the process. This estimate was conditional on prior price changes and volume. According to the joint density, this estimate was derived. A total of four empirical regularities were found, which are as follows: (i) there is a positive correlation between conditional volatility and volume; (ii) large price movements are followed by high volume; (iii) conditioning on lagged volume significantly reduces the "leverage" effect; and (iv) there was a positive risk-return relation after conditioning on lagged volume took place.

In the year 1998, Easley, O'hara, and Srinivas carried out research with the purpose of examining the informative role that the volume of transactions has in stock markets. They devised a model of asymmetric information that enables traders who are equipped with sufficient knowledge to take part in the equity and option markets. The circumstances under which knowledgeable traders engage in option trading were proven, and the significance of this result and its implications for the relationship across markets was investigated. According to the predictions made by their model, the volume of particular kinds of option trades will play a substantial informative function

in the market market. They conducted an empirical evaluation of the hypotheses that underpinned our model by using data from intraday options. The most significant discovery that they made as a result of their empirical investigation was that both fluctuating option volumes and rising option volumes carry information about future stock values.

In their 1998 study, Saatcioglu and Starks looked into the relationship between the price of a stock and the volume of trading volume in a number of Latin American markets. First, they used monthly index data to demonstrate a positive correlation between volume and both the amount of price change and the price change itself. This association was strong enough to be considered significant. In the case of established markets, this is a finding that plenty of other people have also observed. A vector autoregression (VAR) analysis was utilised by the researchers in order to test for Granger causality; however, they were unable to find evidence that was convincing enough to support the hypothesis that changes in stock prices led to an increase in price volume. The findings of studies that were carried out on mature market economies seem to contradict this assertion. As a matter of fact, they find that in four out of the six markets that they analyse, changes in volume appear to presage swings in stock prices. This is the realisation that they come to. This group of emerging countries, which have different institutions and information flows in comparison to developed markets, did not offer a comparable stock price–volume lead–lag connection to the majority of research that uses data from the United States. As a result, they came to the conclusion that this group of emerging countries does not offer such that connection. Based on these findings, the conclusion that can be drawn is that the disparities in institutions and information flows that exist within this set of emerging markets are significant enough

to have an impact on the process of valuing equities securities and would require further examination.

Chebbi, Ammer, and Hameed (2021) conducted a study to investigate the impact of the COVID-19 pandemic on the stock liquidity of companies listed in the S&P 500 index. A daily dataset was created encompassing stock liquidity, as well as the reported cases and deaths related to COVID-19, spanning from 1 January 2020 to 31 December 2020. The researchers discovered a notable inverse correlation between COVID-19, as indicated by the daily increase in case and death counts, and stock liquidity. This suggests that the outbreak of COVID-19 has a detrimental effect on the liquidity of firms. Additionally, the research revealed a notable disparity in liquidity across various sectors.

The study conducted by Alaoui Mdaghri, Raghibi, Thanh and Oubdi (2021) aimed to examine the effects of the worldwide COVID-19 pandemic on the liquidity of stock markets, with a specific focus on the dimensions of depth and tightness. The author employed a panel data regression analysis on a dataset pertaining to the stock market. This dataset encompassed 314 publicly listed enterprises that were active in six countries within the Middle East and North African (MENA) region. The time period under consideration for the analysis was from February to May 2020. The regression analysis conducted on the entire sample revealed a significant association between liquidity, as measured by depth, and the growth in confirmed cases and deaths, as well as the stringency index. Furthermore, there was a positive relationship observed between the market depth and the number of verified COVID-19 cases. The findings of this study also demonstrated that the liquidity of small capitalization and large capitalization enterprises was considerably affected by the confirmed number of cases. However, the stringency index was shown to be important only in relation to the

measure of liquidity depth. Furthermore, the findings pertaining to the examination of sectors and country-level study substantiated that the COVID-19 pandemic exerted a significant and negative influence on the liquidity of stock markets.

## **2.5 Control Variable**

### **2.5.1 Transaction Cost on Stock Returns**

Barclay, Kandel, and Marx (1998) conducted research on the effects that shifts in bid–ask spreads have on the pricing of equities that migrate from the Nasdaq to the NYSE or Amex, as well as those that migrate from Amex to Nasdaq. As well as examining the prices of stocks that migrated from the Nasdaq to the NYSE or Amex, the researchers also looked at the prices of shares that went from Amex to Nasdaq. However, the decrease in spreads is more noticeable when Nasdaq market makers refrain from supplying odd-eighth quotations. This is because the spreads on stocks typically shrink when they shift from the Nasdaq to an exchange. When stocks are traded on Nasdaq rather than Amex, the spreads on those stocks often expand. However, as was said earlier, the widening is more noticeable when Nasdaq market makers tend to avoid odd eighths. Through the utilisation of these facts, they were able to ascertain the impact that transaction fees had on trading volume as well as anticipated potential profits. In accordance with the findings that they obtained, they found that an increase in transaction costs results in a significant reduction in trading volume while having a minimal to nonexistent effect on price levels.

Research on the relationship between asset prices and transaction costs was carried out by Vayanos (1998) among other researchers. Additionally, they anticipated that there would be a risk-free, liquid bond in addition to many hazardous equities with corresponding transaction costs. They also anticipated that the generations would overlap in the economy of the United States. Within the confines of a closed-door

situation, they obtained information regarding stock prices and turnover. It is surprising that the price of a stock could go up if transaction costs go up. On the other hand, the price of a stock that is traded more frequently might be less negatively influenced by an increase in transaction costs. The repercussions of transaction costs were underestimated when employing estimates that were based on the "marginal" investor. When realistic parameter values are used, the impacts of transaction costs on stock prices are very minor, but they have a major impact on turnover.

A additional test was devised by Smirlock and Starks (1985) in order to assess whether or not the link between price change and volume is asymmetric. This particular test was developed since Epps' theoretical model and empirical evidence suggest that it ought to be asymmetric. The findings of experiments that were carried out at periods when fresh information was available lend credence to his concept. According to the findings, the ratio of volume to absolute price change on account of price increases is higher than the ratio on account of price reductions that correspond to price increases. In the event that the testing was carried out during working days for which there was no known information arrival, there was some indication that the opposite was true. It is possible that the interplay between the effect of positive transaction costs and the arrival of no information is responsible for this reversal of results. This view was supported by data that provided evidence for its validity.

The relationship between the pricing of puts and calls on securities was the subject of an investigation that was carried out by Gould and Galai (1974). The notion that efficient markets lead to optimal outcomes served as the foundation for this scholarly investigation. Following their investigation, they arrived at the conclusion that the core model could not be maintained unless extremely high transaction costs were taken into consideration. Additionally, the transaction costs that need to be assumed for the model

to be consistent with the data were so high that it raised disturbing questions regarding whether or not there were untapped opportunities for profit in the options market at least during the period of 1967–1969. This was the case since the model failed to take into account the fact that the data. They also found that other researchers had found comparable departures from the efficient market theory in their work that was connected to this one; however, the reasons that these other researchers had provided for these results appeared to be incorrect on theoretical grounds or too optimistic.

## **2.6 Summary and Gap**

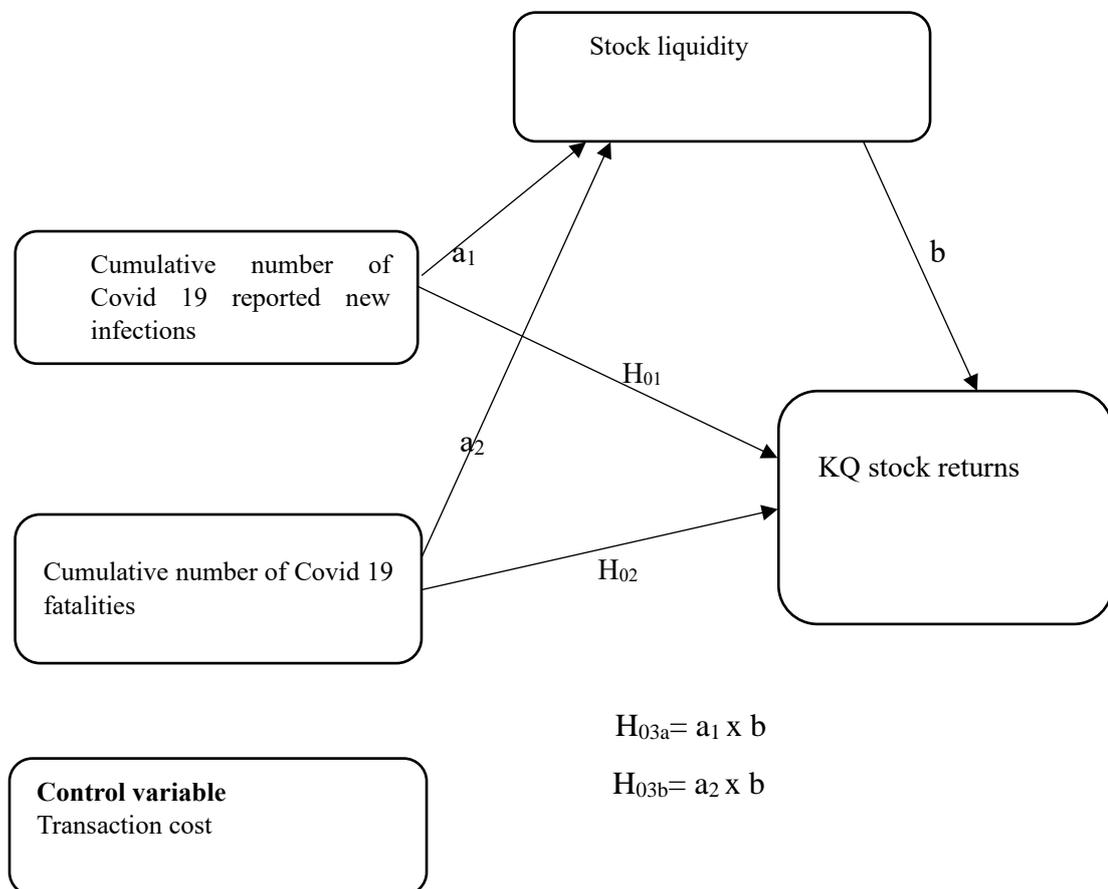
A scan through the empirical existing evidence on how the pandemic affected the aviation industry reveals that majority of the studies focus on how the pandemic affected the industry from the operational perspective. The operational aspects focused explored by these studies include: reduction in flights (Nizetic, 2020), delayed flights, reduced number of passengers, flights cancellation among other operational related effects. However, from the reviewed empirical studies, only one study focused on the effect of the pandemic on the aviation industry from the financial markets performance perspective (Maneenop and Kotcharin, 2020; Zhang, Zhu and Hao, 2022). Therefore, the effect of the pandemic from the financial markets performance perspective has been largely mute. This is despite that fact that whenever disruptions emerge for instance due to a pandemic shock, such developments are factored in the financial markets given that financial markets are driven by news. As such for some firms that may not close on their operations completely rather that scaled down on their operations, a good measure would be from the financial markets' perspective.

Scanty empirical evidence on the effects of covid – 19 pandemic on the performance of the aviation industry from the financial market perspective is largely missing. This is despite the crucial role the industry plays in connecting international markets.

Therefore, this study seeks to fill in this research gap by analysing how the pandemic affected the aviation industry drawing from the financial markets perspective. To undertake this endeavour, a case study of Kenya Airways is hereby proposed.

## 2.7 Conceptual Framework

The conceptual framework for the study is presented in figure 2.1. According to the framework, the share price and share return is conceptualized to be affected by Covid 19 pandemic through the infiltration of the industry's disruptions through operational scale down.



**Figure 2.1: Conceptual framework**

*Source: Researcher, 2023*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Overview**

This chapter addresses the research design that was employed for the purpose of the study. In further detail, this chapter examined the selection of a research design, the target population, the determination of the sample and sampling techniques, the setup of data collection procedures and instruments, and ultimately the analysis and presentation of the collected data.

#### **3.1 Research Design**

The research design is the study framework. Research design can be either quantitative or qualitative. Quantitative research design entails measuring of specific research objectives by applying objective or specified statistical procedures. On the other hand, qualitative research design involves studying human behavior, opinions, themes and motivations with limited use of statistical data analysis (Neuman, 2000). Descriptive research design was employed. The adoption of the descriptive research design was informed by its ability to explore and offer detailed explanation on the study's unit of analysis in this case the performance of the aviation industry in Kenya during the Covid – 19 pandemic period adopting a case study of Kenya Airways. Therefore, based on this study design, the study sought to explore and explain how Covid – 19 pandemic affected the performance of Kenya Airways and to a large extent the aviation industry in Kenya. The selection of the descriptive research design was informed by the research objective. In addition, descriptive research design is a structured research process.

### **3.2 Target Population**

The only aviation company in Kenya, Kenya Airways, whose shares are traded on the Nairobi Stock Exchange (NSE), was the focus of the study. despite the fact that it has been prohibited from trading since July of 2010

### **3.3 Sample Design**

The study did not undertake any sampling given that the focus was on a case study. Therefore, the target population was the sample size.

### **3.4 Data Collection Procedure**

The study relied on the secondary data. All the data used start in March, 2020 as the first confirmed COVID-19 case was recorded on that date. The data on COVID-19 cumulative infections and death come from the WHO database. The numbers are the total confirmed. Data on Kenya Airways share prices was sourced from the Nairobi Securities Exchange. The study period was therefore be March 2020 to July 2020.

#### **3.4.1 Data Collection Instruments**

The study relied on secondary data. Stock market data was extracted data from Nairobi Securities Exchange, while data on COVID19 was collected from the World Health Organization (WHO) website. The excel sheet was sought to tabulate data on Kenya Airways share price for March 2020 to November 2022 on monthly basis.

### **3.5 Data Analysis and Presentation**

Data was analysed through analysed through descriptive and inferential statistics through the aid of STATA software.

#### **3.5.1 7 Test of Mediation Effect**

According to Hayes (2018), the purpose of mediation analysis is to establish the extent to which some putative causal variable (X) influences some outcome (Y) through one

or more mediator variables (M). This study sought to establish the mediating role of stock liquidity on the relationship between COVID 19 information and KQ stock returns. The steps followed in testing for mediation are as show below;

Step 1: Testing the effect of the predictor variable on the mediator variable (path a).

$$M = i_m + a_1X_1 + a_2X_2 + \dots + a_kX_k + \epsilon_m \dots \dots \dots \text{path a}$$

Step 2: Testing effect of the mediator on the outcome variable by regressing the dependent variable on the mediating variable while controlling for the predictor variable (*path b*).

$$Y = i_{y^*} + C'_1X_1 + C'_2X_2 + \dots + C'_kX_k + \beta M + \epsilon_{y^*} \dots \dots \dots \text{path b}$$

Step 3: Test for direct effect by regressing the dependent variable on the independent variable.

$$Y = i_y + C_1X_1 + C_2X_2 + \dots + C_kX_k + \epsilon_y \dots \dots \dots \text{path c}$$

Step 4: Establishing the significance of the mediation coefficients  $c'_1$ ,  $c'_2$ , and  $c'_3$  to  $c'_k$ .

The computation of these coefficients involves the multiplication of the beta coefficients in path a (step 1) with the beta coefficient ( $\beta$ ) of the mediator in path b. The statistical significance of the estimated beta coefficient  $c'$  (ab) was assessed using the Sobel test online calculator developed by Preacher and Hayes (Zhao, Lynch Jr, & Chen, 2010).

### 3.6 Research Model

The study used the ordinary least squares (OLS) regression model shown below.

Model 1: Testing the effect of COVID 19 announcements on stock return

$$SPR = \beta_0 + \beta_1TC + \beta_3CCR + \beta_4CDR + \epsilon$$

Model 2: Testing the effect of COVID 19 announcements on stock liquidity

$$SPR = \beta_0 + \beta_1TC + \beta_3CCR + \beta_4CDR + \epsilon$$

Model 3: Testing the effect of stock liquidity on stock returns

$$SPR = \beta_0 + \beta_1 SLQ + \beta_2 TC + \beta_3 CCR + \beta_4 CDR + \varepsilon$$

Where;

SPR is the stock price returns

SLQ is stock Liquidity

TC is the Transaction cost

CCR is the COVID19 cumulative reported cases

CDR is the COVID19 cumulative death reported

$\beta_1 \dots \beta_4$  = Coefficients of the equations

$\varepsilon$  = error term

### 3.7 Diagnostic Tests

During the data analysis, the following diagnostic tests was carried out upon estimating the OLS model.

#### 3.7.1 Normality Test

In the field of data analysis, the assessment of normality can be conducted at two distinct levels. Firstly, the normality test is conducted at the level of the variables. Secondly, it is also conducted at the level of the regression model. The concept of normality at the variable level pertains to the examination of the distribution of individual variables. In this particular instance, the skewness and kurtosis values of the variables are mostly employed to make inferences about the distribution of the variable. The second dimension of normality pertains to the normality of the regression model that has been fitted. The primary emphasis of this analysis is on the discrepancies exhibited by the fitted model. The assessment of the normality of the model errors primarily aims to evaluate the degree to which the regression model accurately captures the observed data. In inferential statistical processes, such as simple regression analysis,

it is generally believed that the sample is obtained from a population that follows a normal distribution. The Ramsey test was utilised to assess the normality of the residuals in the regression model.

### **3.7.2 Heteroscedasticity test**

Heteroscedasticity refers to an econometric issue characterised by the absence of constant variance in the error terms, hence indicating a lack of uniformity in the variances. This is a post-estimation diagnostic test. According to Greene (2003), if non-existence is present, it will result in biased confidence levels and test statistics. The issue at hand in econometrics is a significant one that has implications for the estimators of Ordinary Least Squares (OLS). While the ordinary least squares (OLS) estimator maintains its unbiasedness, it is worth noting that the calculated standard errors are incorrect. As a consequence of this, confidence intervals and hypothesis tests are not considered to be reliable. Furthermore, it should be noted that the Ordinary Least Squares (OLS) estimator no longer satisfies the criteria of being the Best, Linear, and Unbiased Estimators (BLUE). In the present investigation, it is observed that there was no requirement to conduct tests for the presence of heteroskedasticity. The utilisation of Generalised Linear models for estimate was a fundamental aspect of this work. From an econometric perspective, the Generalised Linear Models (GLMs) provide an excellent solution for addressing issues related to skewness in data and heteroscedasticity by including variance-weighting techniques. The Breusch-Pagan-Godfrey test was employed to investigate heteroscedasticity after estimating the empirical model.

### **3.7.3 Multicollinearity**

The issue of multicollinearity primarily occurs when two independent variables exhibit linear dependence, as shown by a p-value greater than 0.05. The existence of this factor

increases the variability of parameter estimations, resulting in inaccurate estimations of coefficient magnitudes and signs, ultimately leading to flawed and erroneous conclusions. The presence of collinearity was assessed using the Variance Inflation Factor (VIF) or collinearity matrices. This is a post-estimation diagnostic test. The researchers employed an estimate known as the Variance Inflation Factor (VIF) with a threshold of 10 to detect and address the issue of multicollinearity. A VIF value below 10 indicated the absence of multicollinearity among the independent variables.

### **3.8 Measurement of Variables**

In the present study, the variables encompassed within the conceptual framework were operationalized and measured as indicated in the subsequent sections.

#### **3.8.1 Dependent Variable**

Stock price return is the yield obtained by investors of the capital invested in the stock market. Stock return was the dependent variable of the study and it was measured as the difference in share price from the prior day's market close to today's market close divided by the prior day's market close (Zimbra, Chen & Lusch, 2015; Al-Khoury, & Ajlouni, 2007).

#### **3.8.2 Independent Variable**

**COVID 19 cumulative reported cases:** This is the number of reported new COVID19 infection measured as the growth rate of cumulative new infections reported (Cao, Jiang & Zhao, 2020).

**COVID 19 Cumulative death reported:** fatalities denote the number of deaths caused by COVID 19 measured as the growth rate of cumulative death reported (Robin, 2021).

### **3.8.3 Mediator Variable**

**Stock Liquidity:** also referred to as trading volume, is a measure of the total number of shares of a particular stock or security that have been traded within a specific period of time, typically a day, week, or month. It provides insights into the level of activity and liquidity in the market for that particular stock (Gallant, Rossi & Tauchen, 1992).

### **3.8.4 Control Variable**

**Transaction cost:** refers to the expenses and fees associated with executing a financial transaction, such as buying or selling an asset. (Barclay, Kandel & Marx, 1998).

## **3.9 Ethical Consideration**

Ethical concerns are meant to steer the research in a direction that both protects the subjects of the study and instills confidence in the researchers doing the research. The most important aspects of ethical consideration are the respondents' right to privacy and how the data collected was ultimately utilized. To begin, the collection of data did not require any surveys or respondents because the research utilized data that was publicly available. Second, the information may be viewed without charge on the Securities Exchange and the World Health Organization. Nevertheless, the research came to the following conclusions: The data were initially gathered in a manner that was objective, as stipulated in the data collection schedules; this was done so that the results would be as objective as possible. In addition, prior to venturing out into the field to gather data, the researcher ensured that they had secured the appropriate authorization from both the institution and NACOSTI.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

#### 4.0 Overview

This chapter presents the results of the study. The findings are presented in five key sections; descriptive statistics, diagnostic tests, correlation analysis and hypotheses testing.

#### 4.1 Descriptive Statistics

The descriptive statistics for the research variable are presented in table 4.1 as shown below.

The dataset includes information on 111 observations of Kenya Airways' share prices. On average, there was a slight negative change in share prices, indicated by the mean of -0.0001747. The standard deviation of 0.0175871 suggests that the share prices tended to cluster closely around the mean. The lowest recorded share price was -0.0404624, while the highest was 0.048. This indicates a range of share prices, with the majority of observations not deviating significantly from the average. Overall, the data indicates a minor decline in share prices over the observed period.

Among the 111 observations, the mean transaction price for Kenya Airways is 0.0430387. This indicates a positive average transaction price, suggesting an increase in transaction prices over the period. The transaction price data has a standard deviation of 0.0365581, implying some variability in the observed transaction prices around the mean. The range of transaction prices extends from a minimum of 0.000 to a maximum of 0.1506024, indicating diverse transaction prices within the dataset. Overall, the data indicates an upward trend in transaction prices.

The mean of transaction cost is 0.0000449. This indicates the average costs associated with transactions for Kenya Airways. The standard deviation of 0.0000642 reflects limited variability in transaction costs around the mean. The transaction costs range from a minimum of 0.000 to a maximum of 0.0003716, showcasing a narrow distribution of transaction cost values. The data suggests that the costs associated with transactions for the airline were generally consistent and low.

The mean growth of cumulative number of reported COVID-19 cases is 0.1086565. This value indicates a moderate average number of reported cases over the observed period. The standard deviation of 0.2382114 signifies a notable variability in the reported cases around the mean. The range of growth of cumulative cases reported extends from a minimum of 0 to a maximum of 2, illustrating diversity in the reported case counts. The data suggests fluctuations in reported cases, with some periods experiencing higher case numbers.

The mean of growth cumulative number of reported COVID-19 deaths is 0.0428022. This indicates a moderate average number of reported deaths due to the virus. The standard deviation of 0.0764972 reflects a degree of variability in the reported death counts around the mean. The data ranges from a minimum of 0 reported cumulative deaths to a maximum of 0.5. This variable underscores the human toll of the pandemic, affecting not only public health but also influencing economic activities, including those of Kenya Airways.

**Table 4.1: Descriptive Statistics Results**

Variable	Obs	Mean	Std. Dev.	Min	Max
SPR	111	-.0001747	.0175871	-.0404624	.048
TC	111	.0430387	.0365581	0.000	.1506024
SL	111	.0000449	.0000642	0.000	.0003716
CCR	111	.1086565	.2382114	0.000	2.000
CDR	111	.0428022	.0764972	0.000	.500

**Source: Field data 2023**

#### 4.2 Correlation Analysis

The objective of correlation analysis is to comprehend the character and extent of the relationship between research variables. Table 4.2 displays the pairwise correlation coefficients for the variables of the study. Pearson pairwise correlation results in the table show that the relationship between transaction cost ( $r = -0.2639$ ;  $\rho < 0.05$ ), stock volume ( $r = -0.4085$ ;  $\rho < 0.05$ ), Covid 19 cumulative reported cases ( $r = -0.3530$ ;  $\rho < 0.05$ ), Covid 19 cumulative death reported ( $r = -0.3300$ ;  $\rho < 0.05$ ) and stock return is negative and statistically significant. The relationship between stock volume ( $r = 0.2611$ ;  $\rho < 0.05$ ), Covid 19 cumulative reported cases ( $r = 0.4627$ ;  $\rho < 0.05$ ), Covid 19 cumulative death reported ( $r = 0.3717$ ;  $\rho < 0.05$ ) and transaction cost is positive and statistically significant. The relationship between Covid 19 cumulative reported cases ( $r = 0.3829$ ;  $\rho < 0.05$ ), Covid 19 cumulative death reported ( $r = 0.2855$ ;  $\rho < 0.05$ ) and stock volume is positive and statistically significant. The relationship between Covid 19 cumulative reported cases ( $r = 0.6228$ ;  $\rho < 0.05$ ) and Covid 19 cumulative death reported is positive and statistically significant.

**Table 4.2: Pairwise Correlation Results**

	SPR	TC	SLQ	CCR	CDR
SPR	1.0000				
TC	-0.2639*	1.0000			
SLQ	-0.4085*	0.2611*	1.0000		
CCR	-0.3530*	0.4627*	0.3829*	1.0000	
CDR	-0.3200*	0.3717*	0.2855*	0.6228*	1.0000

**Source: Field data 2023**

### 4.3 Multi-collinearity Test

Multi-collinearity in the model was tested using the variance inflation factor (VIF). The VIF measures the interrelationship among the independent variables in a model. A general rule of thumb for multi-collinearity is that values greater than 10 indicates the presence of multi-collinearity in the model and values less than 10 indicates the absence of multi-collinearity in the model. Table 4.3 below shows the results of multicollinearity. The VIF is the table above is 1.42 which is less than generally accepted rule of thumb of 10 indicating that there is no multicollinearity among the independent variables.

**Table 4.3: Multicollinearity Test Results**

Variable	VIF	1/VIF
CDR	1.73	0.576965
CCR	1.51	0.663253
TC	1.22	0.818088
SLQ	1.20	0.834894
Mean VIF	1.42	

**Source: Field data 2023**

### 4.4 Normality Test

Table 4.4 shows the summary of normality test of variables that were employed in this study. The study employed shapiro wilk test of normality at 5 percent level of

significance. The null hypothesis of shapiro wilk test is that the data is normally distributed while the alternative hypothesis is that the data is not normally distributed (Shapiro & Wilk, 1965). The decision criteria rejected the null hypothesis of normal distribution if the p values are less than 0.05 level of significance. Residuals of the model are normally distributed as shown by p value of 0.06208 which is greater than 5 percent level of significance.

**Table 4.4: Normality Test Results**

Variable	Observation	W	V	z	Prob>z
Residuals	111	0.97456	2.293	1.851	0.06208

**Source: Field data 2023**

#### **4.5 Heteroskedasticity Test**

The Breusch-Pagan/Cook-Weisberg test was employed to examine the presence of heteroskedasticity, and the outcomes are displayed in Table 4.5. The examination employs a cluster-robust standard error estimator in order to mitigate the effects of heteroskedasticity. The study employed a robust standard error estimator (cluster) under the assumption that observations are independent within clusters. The Chi-square (1) statistic yielded a value of 1.51, accompanied by a  $\rho$ -value of 0.2192, indicating that the null hypothesis was not rejected. Therefore, it can be concluded that the assumption of homoscedasticity was not broken.

**Table 4.5: Heteroskedasticity Test Results**


---

 Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
 

---

Ho: Constant variance

Variables: fitted values of SR

chi2(1) = 1.51

Prob &gt; chi2 = 0.2192

---

**Source: Field data 2023**


---

#### 4.6 Specification Error Test

The results of the Ramsey RESET test are presented in Table 4.6. Based on the results presented in the table, it can be observed that the probability values associated with the computed statistics in the Ramsey RESET test above the threshold value of 0.05. This suggests that there is no evidence to suggest that the model is misspecified.

**Table 4.6: Specification Error Test Results**

Ramsey	RESET test using powers of the fitted	values of SPR
Ho: model has no omitted variables		
F(3, 103) = 1.50		
Prob > F = 0.2180		

---

**Source: Field data 2023**

#### 4.7 Regression Results

##### 4.7.1. The Effect of the Covid 19 on Stock Prices.

The regression results for the effects of COVID19 pandemic on the Kenya airways share prices are presented in table 4.7. The overall R2 of model shows that the control variables and the independent variables explain 38.66 % variation in Kenya airways share prices over the study period. In general, coefficients of the transaction cost, Covid 19 cumulative reported cases and Covid 19 cumulative death reported are negatively related to Kenya airways share prices. The study control variable was transaction cost.

The findings of the study showed a negative effect of transaction cost ( $\beta = -0.0486$  and  $\rho\text{-value} < 0.05$ ) and hence the null hypotheses was rejected. An increase in transaction costs has likely contributed to a decrease in Kenya Airways' share prices due to its impact on investor perceptions of the airline's financial efficiency and profitability. When transaction costs rise, it can signify operational inefficiencies or challenges that the company faces, leading investors to question the airline's ability to effectively manage its resources (Vayanos, 1998). Higher transaction costs can directly affect the airline's bottom line by eating into its profits. This negative perception can prompt investors to sell off shares as they anticipate reduced earnings potential and financial strain for the company. As a result, the cumulative effect of elevated transaction costs on the airline's financial health and investor sentiment likely contributed to the observed decrease in share prices.

**Table 4.7: Regression Results**

Number of obs	= 111					
F ( 3, 107)	= 20.65					
P> F	= 0.0000					
R-squared	= .3666					
Adjusted R-squared	= .3489					
Root MSE	= .01348					
SPR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
CCR	-.0172621	.0051079	-3.38	0.001	-.0273879	-.0071363
CDR	-.0421308	.0108012	-3.90	.000	-.0635428	-.0207187
TC	-.0485663	.0272057	-1.79	0.077	-.1024983	.005365
_cons	0.0094	.00201	4.69	.000	.0054346	.0134036

**Source: Field data 2023**

**Hypothesis (H<sub>01</sub>)** stated that: *COVID19 cumulative cases reported do not significantly affect Kenya airways share prices.* The results presented in Table 4.7 show that Covid 19 reported new infections has a significant positive effect on Kenya airways share prices ( $\beta_1 = -0.0173$  and  $\rho\text{-value} < 0.05$ ); hence, (H<sub>01</sub>) was rejected. The results agreed

with those of Fasanya, Periola and Adetokunbo (2023) and Alomari, et al., 2022). Firstly, an increase in COVID-19 cases often prompts governments to impose stricter travel restrictions and lockdown measures. These measures can include limitations on both domestic and international travel, directly impacting the operational capacity of airlines like Kenya Airways. With reduced passenger demand, flight cancellations, and route closures, the airline's revenue would take a substantial hit. The uncertainty around the duration of these restrictions can make investors apprehensive about the airline's financial outlook, leading to reduced demand for its shares and subsequently causing share prices to decline.

Higher number of COVID-19 cases can lead to increased public anxiety and fear about travel. Even if travel restrictions are not in place, individuals might choose to avoid non-essential travel due to health concerns. This decrease in passenger confidence results in reduced bookings and occupancy rates for airlines. For Kenya Airways, a prolonged period of reduced passenger numbers would directly impact its financial performance, prompting investors to reevaluate the attractiveness of its shares (Liu et al., (2020). The broader economic impact of a rising number of COVID-19 cases can contribute to a decline in Kenya Airways' share prices. An increase in cases can lead to extended lockdowns, reduced consumer spending, and economic uncertainty. These factors can weaken consumer purchasing power and decrease demand for air travel services (Al-Awadhi et al. (2020). As Kenya Airways grapples with reduced revenue due to decreased passenger demand, its overall financial outlook may worsen, causing investors to reconsider their investment positions and potentially leading to a decrease in share prices.

The impact of increasing COVID-19 cases extends to the global perception of the airline industry's recovery prospects. A growing number of cases could suggest a longer

period of disruption and slower economic recovery, directly affecting airlines' profitability and financial health. Investors may anticipate a more prolonged period of reduced travel demand and weaker financial performance, contributing to a negative sentiment towards Kenya Airways' stock and resulting in share price decreases (Abdelrhim and Elsayed (2020)). In conclusion, the increase in cumulative COVID-19 cases has multifaceted implications for Kenya Airways' share prices. Reduced travel demand, heightened passenger apprehension, broader economic challenges, and a prolonged industry recovery collectively contribute to a decrease in investor confidence and a subsequent decline in share prices. The ongoing interplay between public health and economic factors emphasizes the delicate balance between these interconnected elements in shaping the airline's performance in the stock market.

**Hypothesis (H<sub>02</sub>)** stated that: *Covid 19 cumulative death reported has no significant effect on Kenya airways share prices.* The results presented in Table 4.10 show that cash to deposit ratio has a significant positive effect on financial performance of tier-1 Saccos ( $\beta_1 = -.0421$  and  $p\text{-value} < 0.05$ ); hence, (H<sub>01</sub>) was rejected. The results agreed with those of Alber and Saleh (2020). The increase in the cumulative number of reported COVID-19 deaths can have significant repercussions across various industries, particularly affecting the aviation sector. Kenya Airways, as a major player in the airline industry, could experience a decrease in its share prices due to several key reasons.

A surge in COVID-19 deaths often prompts governments to implement stricter travel restrictions and quarantine measures. These actions can encompass both domestic and international travel, directly impacting the operational capacity of airlines like Kenya Airways. With reduced passenger demand, flight cancellations, and route suspensions, the airline's revenue would be severely impacted. The uncertainty surrounding the duration and severity of these measures can lead to decreased investor confidence in

the airline's financial performance, resulting in reduced demand for its shares and consequently causing share prices to decline (Pyo, (2021). An increase in COVID-19 deaths can amplify public fear and apprehension about traveling. Even if official travel restrictions are not imposed, individuals might choose to avoid air travel due to concerns about health and safety. This drop in passenger confidence translates to reduced bookings and occupancy rates for airlines. For Kenya Airways, an extended period of reduced passenger numbers would directly affect its financial performance, leading investors to reassess the desirability of holding its shares (Algamdi et al., (2021)

The broader economic impact of a rising number of COVID-19 deaths can contribute to a decline in Kenya Airways' share prices. Higher mortality rates can lead to extended lockdowns, reduced consumer spending, and economic uncertainty. These factors weaken consumer purchasing power and decrease demand for air travel services. As Kenya Airways contends with reduced revenue due to dwindling passenger demand, its overall financial outlook may worsen, prompting investors to reevaluate their investment positions and potentially resulting in a decrease in share prices. Lastly, the impact of increasing COVID-19 deaths influences the global perception of the airline industry's recovery prospects. A higher death toll might suggest a prolonged period of disruption and a slower overall economic recovery, directly affecting airlines' profitability and financial stability (Al-Awadhi et al. (2020). Investors could anticipate a longer duration of reduced travel demand and weaker financial performance, contributing to a negative sentiment towards Kenya Airways' stock and leading to share price declines. In conclusion, the increase in cumulative COVID-19 deaths has multifaceted implications for Kenya Airways' share prices. Decreased travel demand, heightened passenger concerns, broader economic challenges, and an extended industry recovery collectively contribute to a decrease in investor confidence and subsequently

a decline in share prices. The ongoing interplay between public health and economic factors underscores the delicate balance between these interconnected elements in shaping the airline's performance in the stock market.

#### **4.7.2 The Mediating Effect of Stock Liquidity on the Relationship between Covid 19 Announcements and Kenya Airways Stock Returns**

Hypothesis H03 aimed to investigate the potential mediating role of stock liquidity in the association between Covid-19 announcements (namely, reported cases and reported deaths) and the stock returns of Kenya Airways. In order to examine mediation, this study assessed the impact of the predictor factors (path a) and the influence of the mediating variable on the result variable, while accounting for the presence of the predictor variables (path b). In the pooled model, the beta coefficient of the path was multiplied by the beta coefficient of the mediator, where the outcome variable was regressed against all the predictor variables and the mediator. The pooled model is presented in Table 4.8.

**Hypothesis (H<sub>3a</sub>)** stated that; *stock liquidity does not significantly mediate the relationship between Covid 19 cumulative reported cases and Kenya airways share prices*. This hypothesis was tested by checking the significance of *path a<sub>1</sub>* and *path b*. The results show that stock liquidity significantly mediates the relationship between COVID19 cumulative reported cases and Kenya airways share prices ( $\beta = 0.0046$  and  $\rho < 0.05$ ).

Liquidity, representing the ease of buying and selling shares, becomes a critical factor. In highly liquid markets, investors can more readily adjust their positions, which can help mitigate panic selling or buying and stabilize share prices during turbulent times (Zhang, Chen & Hu, (2023)). Conversely, in illiquid markets, where trading is limited,

the impact of pandemic-related news can be magnified, leading to sharper and more unpredictable fluctuations in share prices. Thus, stock liquidity acts as a crucial intermediary, influencing how the market digests and reacts to the information regarding COVID-19 cases and, in turn, affecting Kenya Airways' share prices.

**Hypothesis (H<sub>3b</sub>)** stated that; *stock liquidity does not significantly mediate the relationship between COVID19 cumulative death reported and Kenya airways share prices*. This hypothesis was tested by checking the significance of *path a<sub>1</sub>* and *path b*. The results show that stock liquidity failed to mediate the relationship between COVID19 cumulative death reported and Kenya airways share prices ( $\beta = 0.0007$  and  $\rho > 0.05$ ).

Stock liquidity, which represents the ease with which shares can be bought or sold, plays a crucial role. In times of uncertainty, high liquidity can help absorb shocks as it allows for easier trading, potentially stabilizing share prices (Apergis, Lau & Xu, 2023). If liquidity is robust, investors may be more willing to buy or sell shares even in turbulent markets, which can buffer the direct impact of COVID-19 on Kenya Airways' share prices. Conversely, if liquidity is low, it can exacerbate the effects of negative news, like COVID-19 death reports, leading to more significant price swings, as investors may struggle to execute trades efficiently. Therefore, liquidity acts as a mediator, influencing the relationship between COVID-19's impact on the airline industry and Kenya Airways' share prices.

**Table 4.8: Summary Table for Mediation**

	Model 1 (path a)		Model 2 (path b)		Model 3 (path c)	
	<b>B</b>	<b><math>\rho &gt; z</math></b>	<b>B</b>	<b><math>\rho &gt; z</math></b>	<b><math>\beta</math></b>	<b><math>\rho &gt; z</math></b>
a <sub>1</sub>	-.0680	0.001			0.0046	0.029
a <sub>2</sub>	-.1038	0.015			0.0007	0.0625
a <sub>3</sub>	.2713	0.012			-0.0184	0.271
B			-0.068	0.000		0.0625

**Source: Field data 2023**

**Table 4.9: Summary of Hypothesis Test Results**

Hypotheses	B	P<5%	Decision
H <sub>01</sub> : COVID19 cumulative reported cases do not significantly affect Kenya airways share prices	-0.0173	0.046	Rejected
H <sub>02</sub> : COVID19 cumulative death reported do not significantly affect Kenya airways share prices	0.0421	0.007	Rejected
H <sub>03a</sub> : Stock liquidity does not significantly mediates the relationship between COVID19 cumulative cases reported do not significantly affect Kenya airways share prices	0.0046	0.029	Rejected
H <sub>03b</sub> : Stock liquidity does not significantly mediates the relationship between COVID19 cumulative death reported do not significantly affect Kenya airways share prices	0.0007	0.0625	Failed to reject

**Source: Field data 2023**

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.0 Overview

This chapter provides a concise overview of the findings derived from the analysis, along with the corresponding conclusions and recommendations for policy, managerial practices, theoretical advancements, and future research.

#### 5.1 Summary of the Findings

##### 5.1.1 Effect of Covid 19 Cumulative Reported Cases on Kenya Airways Share Prices

The study's first specific objective was to assess the effect of Covid 19 cumulative reported cases on Kenya airways share prices. The findings revealed that Covid 19 cumulative reported cases had a negative and significant effect on Kenya airways share prices ( $\beta = -0.0173$ ;  $\rho < 0.05$ ); suggesting that when Covid 19 cumulative reported cases increased, Kenya airways share prices reduced. The increase in COVID-19 cumulative reported cases has led to a decrease in Kenya Airways' share prices primarily due to the adverse impact of rising cases on travel demand and investor sentiment (Fasanya, Periola and Adetokunbo (2023). As the number of reported cases surged, governments worldwide imposed travel restrictions, lockdowns, and quarantine measures to curb the virus's spread. These restrictions significantly reduced both domestic and international travel, resulting in a sharp decline in passenger bookings for Kenya Airways. The reduced demand for air travel translated into decreased revenue for the airline, compelling investors to reassess the company's financial outlook and future earnings potential. The uncertainty surrounding the duration and severity of the pandemic further heightened apprehension among investors, contributing to a sell-off of shares and consequently driving down share prices.

Moreover, the increase in COVID-19 cases fueled concerns about public health and safety, leading to a decrease in passenger confidence. Individuals became reluctant to travel due to fears of exposure to the virus in crowded airports and airplanes. This decline in consumer trust further aggravated the reduction in passenger bookings, causing revenue losses for Kenya Airways. The airline industry's sensitivity to consumer sentiment was magnified during the pandemic, with health-related anxieties overriding travel aspirations. This shift in passenger behavior not only directly impacted the airline's financial performance but also negatively influenced investor perceptions of the company's recovery prospects (Algamdi et al., (2021). As a result, investors reacted by selling off shares in anticipation of prolonged financial challenges, leading to the observed decrease in share prices.

### **5.1.2 Effect of Covid 19 cumulative death reported on Kenya airways share prices**

The study's second specific objective was to assess the effect of Covid 19 cumulative death reported on Kenya airways share prices. The findings revealed that Covid 19 cumulative death reported had a negative and significant effect on Kenya airways share prices ( $\beta = -0.0421$ ;  $p < 0.05$ ); suggesting that when Covid 19 cumulative death reported increased, Kenya airways share prices reduced. The increase in COVID-19 cumulative death reported has contributed to a decrease in Kenya Airways' share prices primarily due to its impact on passenger confidence and broader economic uncertainty (Fasanya, Periola and Adetokunbo (2023). As the number of reported deaths due to the virus rose, public fear and apprehension about air travel heightened significantly. Concerns over health and safety grew as passengers became more wary of traveling in confined spaces, such as airplanes. This increased hesitancy translated into reduced bookings and occupancy rates for Kenya Airways, leading to a significant drop in revenue. The airline's financial performance took a hit as the demand for air travel declined,

prompting investors to reevaluate their investment decisions. The perception of air travel as a potential health risk dampened the company's recovery prospects and, consequently, contributed to the downward pressure on share prices.

Furthermore, the rise in COVID-19 deaths underscored the broader economic impact of the pandemic. As death tolls increased, governments implemented stricter lockdown measures and travel restrictions to mitigate the virus's spread (Alomari, et al., 2022). These measures not only disrupted air travel but also led to reduced consumer spending, economic uncertainty, and even recessionary pressures. The resulting contraction in economic activity weakened consumer purchasing power and reduced demand for air travel services, directly impacting the financial performance of airlines like Kenya Airways. Investors reacted to this uncertain economic landscape by adjusting their portfolios, including the reduction of airline stocks, thus amplifying the negative effect on share prices.

### **5.1.3 Mediation effect of Stock Liquidity on the Relationship between Covid 19**

#### **Cumulative Death Reported and Kenya Airways Share Prices**

The study's third specific objective was to assess the mediating effect of stock liquidity on the relationship between Covid 19 cumulative reported cases and Kenya airways share prices. The findings revealed that stock liquidity had a partial mediating effect on the relationship between Covid 19 cumulative reported cases and Kenya airways share prices ( $\beta = 0.0046$ ;  $p < 0.05$ ).

When considering the simplicity of purchasing and selling shares, liquidity emerges as a crucial determinant. Highly liquid markets afford investors greater flexibility to modify their positions, thereby contributing to the mitigation of panic selling or purchasing and the stabilization of share prices amidst periods of volatility (Zhang,

Chen & Hu, 2023). On the contrary, illiquid markets, characterized by restricted trading activity, may amplify the effects of news pertaining to the pandemic, resulting in more pronounced and uncertain volatility in stock prices. Therefore, stock liquidity serves as a pivotal intermediary, exerting an impact on the market's assimilation and response to the information pertaining to the COVID-19 cases, which subsequently affects the share prices of Kenya Airways.

#### **5.1.4 Mediation effect of Stock Liquidity on the Relationship between Covid 19 Cumulative Death Reported and Kenya Airways Share Prices**

The study's fourth specific objective was to assess the mediating effect of stock liquidity on the relationship between Covid 19 cumulative death reported and Kenya airways share prices. The findings revealed that stock liquidity did not mediate the relationship between the relationship between Covid 19 cumulative death reported and Kenya airways share prices ( $\beta = 0.0007$ ;  $\rho > 0.05$ ). The convenience with which shares can be purchased or sold, or stock liquidity, is an essential factor. Apergis, Lau, and Xu (2023) suggest that during periods of unpredictability, heightened liquidity can facilitate trading, thereby potentially stabilizing share prices and aiding in the absorption of shocks. The presence of strong liquidity may incentivize investors to purchase or sell shares during periods of market volatility, thereby mitigating the direct repercussions of the COVID-19 pandemic on the share prices of Kenya Airways.

Despite the lack of a mediating effect, negative news, such as COVID-19 death reports, may lead to liquidity, resulting in more substantial price fluctuations as investors may encounter difficulties in effectively executing trades. Perhaps, future studies may explore why stock liquidity failed to mediate the relationship between the impact of COVID-19 on Kenya Airways stock returns by exploring other sectors such as health care and pharmaceutical.

## 5.2 Conclusion

This study first objective was to examine the effect of Covid 19 cumulative reported cases on Kenya airways share prices. It was concluded that the increase in COVID-19 cumulative reported cases exerted a downward pressure on Kenya Airways' share prices returns through its dual impact on reduced travel demand and weakened investor sentiment. The interplay of travel restrictions, declining passenger confidence, and heightened uncertainty during the pandemic created an environment where the airline's financial performance and recovery outlook were viewed as more precarious. As the aviation industry grappled with the unprecedented challenges brought by the pandemic, Kenya Airways' share prices were significantly influenced by these evolving dynamics.

This study second objective was to examine the effect of Covid 19 cumulative death reported on Kenya airways share prices. It was concluded that the increase in COVID-19 cumulative death reported exerted a downward influence on Kenya Airways' share prices primarily through its effects on passenger apprehension and the broader economic context. The confluence of reduced travel demand due to safety concerns and the economic downturn caused by the pandemic translated into significant challenges for the airline industry. Kenya Airways' share prices, like those of many airlines, were sensitive to these factors, reflecting the complex interplay between public health, economic considerations, and investor sentiment.

On control variables, the study also concluded that the increase in transaction costs has implications beyond its direct financial impact on Kenya Airways. It serves as an indicator of operational inefficiencies and financial stress, which can erode investor confidence in the airline's overall performance and future prospects. As a consequence, this negative sentiment translates into downward pressure on share prices, underlining the interconnected nature of financial metrics and investor perception.

The study also concluded that stock liquidity mediated the relationship between Covid 19 reported cases and death cases and Kenya airways share price. Lastly, the study concluded that an increase in stock volume resulting in a decrease in Kenya Airways' share prices underscores the role of market sentiment and investor behavior in shaping stock price movements. Elevated selling activity signals apprehension among investors and a lack of confidence in the company's prospects, contributing to the observed decline in share prices. This relationship highlights how market dynamics, driven by collective perceptions and actions, can influence the financial performance of airlines in the stock market.

### **5.3 Recommendations**

#### **5.3.1 Policy Recommendations**

Firstly, there is a critical need for enhanced coordination between the aviation industry and government health authorities. Establishing robust communication channels and protocols would allow for prompt information sharing, enabling airlines like Kenya Airways to align their operations with health advisories and travel restrictions. This can aid in minimizing abrupt shocks to passenger demand and enhance market stability, which would, in turn, positively influence share prices.

Secondly, policymakers should consider developing contingency plans that incorporate a range of scenarios, including various pandemic severity levels. These plans could outline adaptive strategies that airlines can employ to adjust their operations, manage costs, and maintain business continuity during times of crisis. Such proactive planning would provide a degree of predictability for investors, potentially mitigating the share price volatility witnessed during the COVID-19 pandemic.

Furthermore, policymakers should prioritize financial support mechanisms tailored to the aviation industry during crises. Establishing dedicated funds or financial assistance programs could help airlines, including Kenya Airways, weather the storm of decreased passenger demand. These mechanisms can prevent liquidity issues and financial distress that could negatively impact share prices and the overall stability of the industry.

In addition, fostering international collaboration and harmonization of travel-related regulations could bolster investor confidence and stabilize share prices. When governments across borders align their travel restrictions and health protocols, the aviation industry can more effectively plan routes, allocate resources, and make informed investment decisions.

Lastly, enhancing transparency and information dissemination is crucial. Governments should work with airlines to ensure accurate and timely reporting of health and safety measures. Transparent communication can mitigate panic and uncertainty among passengers, investors, and stakeholders, contributing to a more stable market environment and potentially positively affecting share prices.

### **5.3.2 Managerial Implication**

Firstly, adaptability and scenario planning should be prioritized. Develop comprehensive contingency plans that outline specific actions to be taken in response to varying pandemic severity levels. This includes considering reductions in flight schedules, fleet adjustments, and cost-cutting measures. By having a well-defined playbook, management can respond swiftly and decisively to changing conditions, potentially mitigating the negative impact on share prices.

Secondly, maintain open lines of communication with stakeholders. Effective communication, both internally and externally, is crucial during times of uncertainty. Provide clear updates on operational changes, safety protocols, and measures taken to protect passengers and staff. Transparent and timely communication can help manage expectations, build trust, and potentially influence investor sentiment, which in turn affects share prices.

Furthermore, explore innovative revenue streams and operational efficiencies. The pandemic has accelerated the adoption of new technologies and business models in the aviation industry. Consider offering cargo services, repurposing aircraft for freight, or introducing flexible ticketing options to tap into new sources of revenue. Identifying and implementing these innovations can demonstrate resilience to investors and positively impact share prices.

Additionally, prioritize employee well-being. The aviation industry heavily relies on its workforce. Providing a safe and supportive work environment is not only ethically important but can also contribute to overall operational stability. Engaged and motivated employees are more likely to provide exceptional customer service, which can enhance the airline's reputation and potentially positively affect share prices.

Moreover, consider the implementation of cost-efficient strategies without compromising safety standards. Explore cost optimization initiatives, negotiate lease agreements, and manage variable costs effectively. These actions can demonstrate prudent financial management, which can bolster investor confidence and reflect positively on share prices.

Engaging with relevant authorities and industry bodies is also recommended. Collaborate with government agencies, health organizations, and industry associations

to stay informed about changing regulations, travel advisories, and best practices. Being proactive in complying with guidelines can enhance the airline's credibility and contribute to maintaining investor confidence.

Lastly, cultivate a long-term view and focus on resilience. While the pandemic's effects may be acute, successful leadership involves planning for recovery and the post-pandemic era. Developing strategies to rebuild operations, reengage passengers, and regain market share can demonstrate strategic foresight and positively influence investor perception and, subsequently, share prices

### **5.3.2 Theoretical Implication**

Applying information asymmetry theory to the context of the COVID-19 pandemic and its impact on Kenya Airways' share prices suggests several strategies to address information imbalances. Firstly, management should prioritize transparent and timely communication. In times of uncertainty, openly sharing relevant information about the airline's response to the pandemic, safety measures, operational changes, and financial performance is essential. Regular updates through official communication channels can help minimize information gaps and reduce uncertainty among investors, potentially leading to a more accurate valuation of the company's shares.

Secondly, consider enhancing disclosure practices. Provide comprehensive information about the airline's risk exposure to the pandemic, including the potential impact of varying numbers of COVID-19 cases and deaths on operations and financial performance. Disclosing this information in financial reports, press releases, and public statements can empower investors to make informed decisions and manage their expectations, reducing information asymmetry.

Furthermore, focus on investor education. Educate investors about the aviation industry's intricacies and the potential effects of pandemic-related variables on share prices. This can be achieved through webinars, investor relations efforts, and accessible resources that explain the relationship between cumulative COVID-19 metrics and share prices, thereby reducing the information gap.

Additionally, implement proactive risk management strategies. Develop mechanisms to identify, assess, and mitigate risks arising from information asymmetry. Consider establishing a risk committee responsible for monitoring information flow, ensuring consistent messaging, and addressing any investor concerns promptly. By doing so, the airline can demonstrate its commitment to minimizing information imbalances.

Collaboration with regulatory bodies is also recommended. Work with relevant authorities to ensure consistent and accurate communication about the pandemic's impact on the aviation industry. This collaborative approach can help align messaging and reduce conflicting information, promoting a more transparent and harmonized information environment.

Furthermore, explore the potential of technology to bridge information gaps. Utilize data analytics and real-time reporting to provide stakeholders with up-to-date information on operational performance, health and safety measures, and financial developments. Leveraging technology can contribute to a more equitable flow of information between management and investors.

Lastly, consider engaging with financial analysts and experts. Collaborate with professionals who specialize in the aviation sector and share price analysis. Their insights can help ensure that accurate and unbiased assessments of the airline's

performance are available to investors, reducing the potential for information asymmetry.

In conclusion, applying information asymmetry theory to the context of the COVID-19 pandemic and its impact on Kenya Airways' share prices suggests several strategies to address information imbalances. By emphasizing transparency, enhancing disclosure practices, educating investors, proactive risk management, collaborating with regulators, leveraging technology, and engaging with experts, the airline can foster a more equitable information environment, leading to better-informed investors and potentially influencing share prices more accurately.

#### **5.4 Limitations of the Study**

While the study might offer insights into Kenya Airways' share price movements during the pandemic, isolating the pandemic's effects from other concurrent market influences can be challenging. Various external factors, such as global economic trends, geopolitical events, and industry-specific developments, could intertwine with the pandemic's impact on share prices, making it difficult to attribute observed changes solely to the pandemic.

The study might also face limitations related to the specificity of the case. Kenya Airways operates within a particular geographic, regulatory, and economic context, which might limit the generalizability of findings to other airlines or regions. Therefore, caution should be exercised when extrapolating conclusions beyond the case of Kenya Airways.

Additionally, behavioral and psychological factors that influence investor decision-making might not be fully captured by quantitative data alone. Factors such as market

sentiment, perception, and psychological biases could play a role in share price fluctuations but might require qualitative research methods for deeper exploration.

Lastly, while the study might provide insights into the correlation between COVID-19 metrics and share prices, it might not fully capture the causal relationship between the pandemic and the observed effects. Other unobserved variables or confounding factors could be at play, challenging the establishment of a direct cause-and-effect relationship.

### **5.5 Recommendations for Future Research**

Comparative analysis approach could enrich the study's scope by juxtaposing Kenya Airways' share price dynamics with those of other regional or global airlines. By assessing whether observed trends are unique to Kenya Airways or reflective of broader industry trends, researchers can shed light on whether the airline's experience is representative or distinctive within the aviation sector.

To offer a comprehensive perspective, future research could delve beyond share prices and examine the pandemic's influence on various financial indicators, encompassing revenue, profit margins, and liquidity for Kenya Airways. Such an encompassing analysis would provide a holistic understanding of the multifaceted challenges encountered by the airline during the pandemic period.

Moreover, exploring the interplay between investor sentiment and share price movements could unveil the psychological aspects driving market dynamics. Conducting sentiment analysis on investor perceptions and media coverage related to Kenya Airways during the pandemic could elucidate the role of public perception in influencing stock market behaviours.

As government policies played a substantial role during the pandemic, future research might investigate the connection between governmental decisions, travel restrictions,

and stimulus packages, and how these interventions affected investor confidence and the operational environment for Kenya Airways.

## REFERENCES

- Abdelrhim, M., & Elsayed, A. (2020). The Effect of COVID-19 Spread on the e-commerce market: The case of the 5 largest e-commerce companies in the world. *Available at SSRN 3621166*.
- Abubakar, A. (2020). Coronavirus (COVID-19): Effect and survival strategy for businesses. *Journal of Economics and Business*, 3(2).
- Akerlof, G. A. (1978). The market for “lemons”: Quality uncertainty and the market mechanism. In *Uncertainty in economics* (pp. 235-251). Academic Press.
- Alam, M. M., Wei, H., & Wahid, A. N. (2021). COVID-19 outbreak and sectoral performance of the Australian stock market: An event study analysis. *Australian economic papers*, 60(3), 482-495.
- Alaoui Mdaghri, A., Raghibi, A., Thanh, C. N., & Oubdi, L. (2021). Stock market liquidity, the great lockdown and the COVID-19 global pandemic nexus in MENA countries. *Review of Behavioral Finance*, 13(1), 51-68.
- Alber, N., & Saleh, A. (2020). The impact of covid-19 spread on stock markets: the case of the GCC countries. *International Business Research*, 13(11).
- Algamdi, A., Brika, S. K. M., Musa, A., & Chergui, K. (2021). COVID-19 deaths cases impact on oil prices: probable scenarios on Saudi Arabia economy. *Frontiers in Public Health*, 9, 620875.
- Al-Khouri, R. S., & Ajlouni, M. M. (2007). Narrow price limit and stock price volatility in emerging markets: Empirical evidence from Amman stock exchange. *The International Journal of Business and Finance Research*, 1(1), 104-120.
- Alomari, M., Al Rababa'a, A. R., Rehman, M. U., & Power, D. M. (2022). Infectious diseases tracking and sectoral stock market returns: A quantile regression analysis. *The North American Journal of Economics and Finance*, 59, 101584.
- Alsamhi, M. H., Al-Ofairi, F. A., Farhan, N. H., Al-Ahdal, W. M., & Siddiqui, A. (2022). Impact of Covid-19 on firms' performance: Empirical evidence from India. *Cogent Business & Management*, 9(1), 2044593.
- Apergis, N., Lau, C. K., & Xu, B. (2023). The impact of COVID-19 on stock market liquidity: Fresh evidence on listed Chinese firms. *International Review of Financial Analysis*, 90, 102847.
- Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities?. *Research in international business and finance*, 54, 101249.
- Atems, B., & Yimga, J. (2021). Quantifying the impact of the COVID-19 pandemic on US airline share prices. *Journal of Air Transport Management*, 97, 102141.
- Baek, S., Mohanty, S. K., & Glambosky, M. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance research letters*, 37, 101748.
- Baker, S. R., Farrokhnia, R. A., Meyer, S., Pagel, M., & Yannelis, C. (2020). How does household spending respond to an epidemic? Consumption during the 2020 COVID-19 pandemic. *The Review of Asset Pricing Studies*, 10(4), 834-862.

- Barclay, M. J., Kandel, E., & Marx, L. M. (1998). The effects of transaction costs on stock prices and trading volume. *Journal of Financial Intermediation*, 7(2), 130-150.
- Berglund, T. (2020). Liquidity and corporate governance. *Journal of Risk and Financial Management*, 13(3), 54.
- Boubaker, S., Gounopoulos, D., & Rjiba, H. (2019). Annual report readability and stock liquidity. *Financial Markets, Institutions & Instruments*, 28(2), 159-186.
- Burdorf, A., Porru, F., & Rugulies, R. (2020). The COVID-19 (coronavirus) pandemic. *Scandinavian journal of work, environment & health*, 46(3), 229-230.
- Cao, J., Jiang, X., & Zhao, B. (2020). Mathematical modeling and epidemic prediction of COVID-19 and its significance to epidemic prevention and control measures. *Journal of Biomedical Research & Innovation*, 1(1), 1-19.
- Cevik, E., Kirci Altinkeski, B., Cevik, E. I., & Dibooglu, S. (2022). Investor sentiments and stock markets during the COVID-19 pandemic. *Financial Innovation*, 8(1), 69.
- Chandra, P., Dutta, P., & Yeh, C. H. (2022). Role of E-Commerce Coupled with Digital Technology During COVID-19 Crisis in Asia. In *Changing Face of E-commerce in Asia* (pp. 359-387).
- Chebbi, K., Ammer, M. A., & Hameed, A. (2021). The COVID-19 pandemic and stock liquidity: Evidence from S&P 500. *The Quarterly Review of Economics and Finance*, 81, 134-142.
- Christopoulos, A. G., Kalantonis, P., Katsampoxakis, I., & Vergos, K. (2021). COVID-19 and the energy price volatility. *Energies*, 14(20), 6496.
- Coen, B. (2023). The COVID-19 Pandemic: A Comprehensive Review of Global Impacts and Mitigation Strategies. *ENDLESS: INTERNATIONAL JOURNAL OF FUTURE STUDIES*, 6(2), 356-365.
- Demir, E., Kizys, R., Rouatbi, W., & Zarembo, A. (2021). COVID-19 vaccinations and the volatility of energy companies in international markets. *Journal of Risk and Financial Management*, 14(12), 611.
- Devinney, T.M., Yip, G.S. and Johnson, G. (2010), "Using frontier analysis to evaluate company
- Easley, D., O'hara, M., & Srinivas, P. S. (1998). Option volume and stock prices: Evidence on where informed traders trade. *The Journal of Finance*, 53(2), 431-465.
- Fasanya, I., Periola, O., & Adetokunbo, A. (2023). On the effects of Covid-19 pandemic on share prices: an imminent global threat. *Quality & Quantity*, 57(3), 2231-22.
- Fei, F., & Zhang, J. (2023). Chinese stock market volatility and herding behavior asymmetry during the COVID-19 pandemic. *Cogent Economics & Finance*, 11(1), 2203436.

- Ferreira, A. and Otley, D. (2009), "The design and use of performance management systems: an extended framework for analysis", *Management Accounting Research*, 2(4). 263-282.
- Gallant, A. R., Rossi, P. E., & Tauchen, G. (1992). Stock prices and volume. *The Review of Financial Studies*, 5(2), 199-242.
- Giovannoni, E. and Pia Maraghini, M. (2013), "The challenges of integrated performance measurement systems: integrating mechanisms for integrated measures", *Accounting, Auditing & Accountability Journal*, 26(6). 978-1008.
- Gould, J. P., & Galai, D. (1974). Transactions costs and the relationship between put and call prices. *Journal of Financial Economics*, 1(2), 105-129.
- Haryanto, A. M., & Mawardi, W. (2021). Impact of covid-19 news on performance of indonesia stock market. *Universal Journal of Accounting and Finance*, 9(2), 226-231.
- He, P., Sun, Y., Zhang, Y., & Li, T. (2020). COVID-19's impact on share prices across different sectors—An event study based on the Chinese stock market. *Emerging Markets Finance and Trade*, 56(10), 2198-2212.
- Heiets I., Xie Y. (2021). The Impact of the COVID-19 Pandemic on the Aviation Industry. *Journal of Aviation*, 5 (2), 111-126
- Heyden, K. J., & Heyden, T. (2021). Market reactions to the arrival and containment of COVID-19: An event study. *Finance research letters*, 38, 101745.
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A. and Tiberius, V. (2020), "The economics of Covid-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis", *International Journal of Entrepreneurial Behavior & Research*, 26(5). 1067-1092.
- Larcker, D.F. Lynch, B. Tayan, B. and Taylor, D.J. (2020), "The spread of Covid -19 disclosure", *Stanford Closer Look Series*, June, pp. 1-15
- Li, X., Wu, P., & Wang, W. (2020). Incorporating share prices and news sentiments for stock market prediction: A case of Hong Kong. *Information Processing & Management*, 57(5), 102212.
- Liu, H., Manzoor, A., Wang, C., Zhang, L., & Manzoor, Z. (2020). The COVID-19 outbreak and affected countries stock markets response. *International Journal of Environmental Research and Public Health*, 17(8), 2800.
- Maneenop, S., and Kotcharin, S. (2020). The impacts of COVID-19 on the global airline industry: An event study approach. *Journal of Air Transport Management*, 7(2). 12 – 28.
- Maroof, Z., Muhammad, J., and Munazza, N. (2021). The Impact of Covid-19 on the Aviation Industry: A Post Covid Econometric Analysis, *International Journal of Innovation, Creativity and Change*.15(8)
- Martins, A. M., & Cró, S. (2022). Airline stock markets reaction to the COVID-19 outbreak and vaccines: An event study. *Journal of Air Transport Management*, 105, 102281.

- Mazareanu, E. (2020). Coronavirus: Impact on the Aviation Industry Worldwide— Statistics & Facts. Statista website, June, 4.
- Melnyk, S.A., Bititci, U., Platts, K., Tobias, J. and Andersen, B. (2014), “Is performance measurement and management fit for the future?”, *Management Accounting Research*, Vol. 25 25(2). 173-186.
- Mensi, W., Vo, V. X., & Kang, S. H. (2023). Can COVID-19 deaths and confirmed cases predict the uncertainty indexes? A multiscale analysis. *Studies in Economics and Finance*, 40(3), 569-587.
- Mishra, P. K., & Mishra, S. K. (2021). COVID-19 pandemic and stock market reaction: empirical insights from 15 Asian countries. *Transnational Corporations Review*, 13(2), 139-155.
- Modgil, S., Dwivedi, Y. K., Rana, N. P., Gupta, S., & Kamble, S. (2022). Has Covid-19 accelerated opportunities for digital entrepreneurship? An Indian perspective. *Technological Forecasting and Social Change*, 175, 121415.
- Moosa, I. A., & Khatatbeh, I. N. (2021). International tourist arrivals as a determinant of the severity of COVID-19: International cross-sectional evidence. *Journal of Policy Research in Tourism, Leisure and Events*, 13(3), 419-434.
- Ndwandwe, D., & Wiysonge, C. S. (2021). COVID-19 vaccines. *Current opinion in immunology*, 71, 111-116.
- Ngene, G. M., & Mungai, A. N. (2022). Stock returns, trading volume, and volatility: The case of African stock markets. *International Review of Financial Analysis*, 82, 102176.
- Ngwakwe, C. C. (2021). COVID-vaccination and performance in five global stock market indexes. *Acta Universitatis Danubius. (Economica)*, 17(5), 55-65.
- Nhamo, G., Dube, K., Chikodzi, D., Nhamo, G., Dube, K., & Chikodzi, D. (2020). COVID-19 and implications for the aviation sector: A global perspective. *Counting the cost of COVID-19 on the global tourism industry*, 89-107.
- Nizetic, S. (2020). Impact of coronavirus (COVID-19) pandemic on air transport mobility, energy, and environment: A case study. *International Journal of Energy Research*. 44.
- Obrenovic, B., Du, J., Godinic, D., Tsoy, D., Aamir, M., Khan, S. and Jakhongirov, I. (2020), “Sustaining enterprise operations and productivity during the COVID-19 pandemic: enterprise effectiveness and sustainability model”, *Sustainability*, 12(15). 1-27.
- Orlowski, L. T. (2021). The 2020 pandemic: Economic repercussions and policy responses. *Review of Financial Economics*, 39(1), 20-26.
- Park, S. E. (2020). Epidemiology, virology, and clinical features of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2; Coronavirus Disease-19). *Clinical and experimental pediatrics*, 63(4), 119.
- Prajapati, M. (2023). Comparative Analysis Of The Us Stock Market Performance: Pre And Post Covid-19. *Sachetas*, 2(3), 43-48.

- Pyo, D. J. (2021). The COVID-19 and stock return volatility: Evidence from South Korea. *East Asian Economic Review*, 25(2), 205-230.
- Qaiser, A., and Sultan, A. (2020). Pre-and Post-COVID-19 condition, performance and future of the airline industry: Evidence from accounting data. *Amazonia*, 10(37), 1- 23.
- Raju, T. B., Singh, P., Singh, B., & Jadhav, P. (2022). Identification of factors affecting coal freight market. In *Intelligent Infrastructure in Transportation and Management: Proceedings of i-TRAM 2021* (pp. 271-284). Springer Singapore.
- Robin, R. (2021). Death Infectious: Impact of the Coronavirus Disease (COVID-19) on Stock Returns. *Journal of Economics, Business, & Accountancy Ventura*, 24(1), 95.
- Rouatbi, W., Demir, E., Kizys, R., & Zaremba, A. (2021). Immunizing markets against the pandemic: COVID-19 vaccinations and stock volatility around the world. *International review of financial analysis*, 77, 101819.
- Saatcioglu, K., & Starks, L. T. (1998). The stock price–volume relationship in emerging stock markets: the case of Latin America. *International Journal of forecasting*, 14(2), 215-225.
- Salama, A. M. (2020). Coronavirus questions that will not go away: interrogating urban and socio-spatial implications of COVID-19 measures. *Emerald Open Research*, 2.
- Schäfer, J. G. (2023). Means of Transport in Air Freight. In *Air Cargo: Participants-Processes-Markets-Developments* (pp. 151-190). Wiesbaden: Springer Fachmedien Wiesbaden.
- Schmidt, C. G., & Wagner, S. M. (2019). Blockchain and supply chain relations: A transaction cost theory perspective. *Journal of Purchasing and Supply Management*, 25(4), 100552.
- Smirlock, M., & Starks, L. (1985). A further examination of stock price changes and transaction volume. *Journal of Financial research*, 8(3), 217-226.
- Stobart, A., & Duckett, S. (2022). Australia's Response to COVID-19. *Health Economics, Policy and Law*, 17(1), 95-106.
- Tepylo, N., Straubinger, A., & Laliberte, J. (2023). Public perception of advanced aviation technologies: A review and roadmap to acceptance. *Progress in Aerospace Sciences*, 138, 100899.
- Udejaja, E. A., & Isah, K. O. (2022). Stock markets' reaction to COVID-19: Analyses of countries with high incidence of cases/deaths in Africa. *Scientific African*, 15, e01076.
- Vayanos, D. (1998). Transaction costs and asset prices: A dynamic equilibrium model. *The Review of Financial Studies*, 11(1), 1-58.

- Wells, C. R., Sah, P., Moghadas, S. M., Pandey, A., Shoukat, A., Wang, Y., ... & Galvani, A. P. (2020). Impact of international travel and border control measures on the global spread of the novel 2019 coronavirus outbreak. *Proceedings of the National Academy of Sciences*, 117(13), 7504-7509.
- Zhang, L., Chen, W., & Hu, N. (2023). Economic policy uncertainty and stock liquidity: evidence from China. *International Journal of Emerging Markets*, 18(1), 22-44.
- Zhang, Y., Zhu, L., and Hao, F. (2022). The Impact of the COVID-19 Pandemic on China's Airline Industry. *Public Health*.
- Zimbra, D., Chen, H., & Lusch, R. F. (2015). Stakeholder analyses of firm-related web forums: Applications in stock return prediction. *ACM Transactions on Management Information Systems (TMIS)*, 6(1), 1-38.

## APPENDICES

## Appendix I: Data Collection Schedule

<b>Variable</b>	<b>Symbol</b>	<b>Measurement</b>	<b>March 2020- July 2020</b>
<b>Dependent variable</b>			
<b>Stock return</b>	SP	share return which is computed from the change in share price	
<b>Independent variables</b>			
<b>Covid 19 cumulative reported cases</b>	CCR	measured the growth rate of cumulative new infections reported	
<b>Covid 19 cumulative death reported</b>	CDR	measured as the growth rate of the reported new deaths	
<b>Mediator variables</b>			
<b>Stock liquidity</b>	SL	Measured as value of shares divided market capitalization	
<b>Mediator variables</b>			
<b>Transaction cost</b>	TC	Measured as expenses and fees associated with executing a financial transaction, such as buying or selling an asset	

## Appendix II: Stata Output

Source	SS	df	MS	Number of obs =	111
Model	.135076682	3	.045025561	F( 3, 107) =	16.42
Residual	.293449018	107	.002742514	Prob > F =	0.0000
Total	.4285257	110	.003895688	R-squared =	0.3152
				Adj R-squared =	0.2960
				Root MSE =	.05237

SLQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CCR	-.0680068	.0198438	-3.43	0.001	-.1073448 -.0286687
CDR	-.103847	.0419617	-2.47	0.015	-.1870312 -.0206629
TC	.2712782	.105692	2.57	0.012	.0617561 .4808002
_cons	.0981099	.0078085	12.56	0.000	.0826304 .1135893

```
. regress SPR CCR CDR TC
```

Source	SS	df	MS	Number of obs =	111
Model	.011254474	3	.003751491	F( 3, 107) =	20.65
Residual	.019443159	107	.000181712	Prob > F =	0.0000
Total	.030697633	110	.000279069	R-squared =	0.3666
				Adj R-squared =	0.3489
				Root MSE =	.01348

SPR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CCR	-.0172621	.0051079	-3.38	0.001	-.0273879 -.0071363
CDR	-.0421308	.0108012	-3.90	0.000	-.0635428 -.0207187
TC	-.0485663	.0272057	-1.79	0.077	-.1024983 .0053658
_cons	.0094191	.00201	4.69	0.000	.0054346 .0134036

```
. regress SPR CCR CDR SLQ TC
```

Source	SS	df	MS	Number of obs =	111
Model	.01261997	4	.003154992	F( 4, 106) =	18.50
Residual	.018077663	106	.000170544	Prob > F =	0.0000
Total	.030697633	110	.000279069	R-squared =	0.4111
				Adj R-squared =	0.3889
				Root MSE =	.01306

SPR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CCR	-.012623	.005213	-2.42	0.017	-.0229582 -.0022878
CDR	-.0350469	.0107593	-3.26	0.002	-.0563782 -.0137155
SLQ	-.0682148	.0241075	-2.83	0.006	-.1160103 -.0204194
TC	-.0300611	.0271556	-1.11	0.271	-.0838998 .0237776
_cons	.0161116	.0030636	5.26	0.000	.0100377 .0221855