EFFECT OF COVID-19 ON CONVENTIONAL AND ISLAMIC STOCK MARKETS IN PAKISTAN

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ABSTRACT

This study has focused mainly on investigating an association among COVID-19 pandemic, Islamic stock market performance, and conventional stock market performance in Pakistan. In this study, COVID-19 pandemic was considered as independent variable. However, Islamic and conventional stock market performance was considered a dependent variable. Present research used secondary sources of data (Pakistan Stock Exchange and official portal of Government of Pakistan) to perform present study for identifying association among study's variables. A sample of first quarter of 2020 (119 days) was collected for assessing the relationship between study variable. Statistical tests (correlation and regression analysis) were then used for analyzing collected data with the help of STATA software. Correlation and regression analysis proved the significant negative relationship among COVID-19 pandemic (independent variable) and Islamic and conventional stock market performance (dependent variable) in Pakistan. Findings have concluded that performance of both Islamic stock market and conventional stock market have declined as a result of COVID-19 pandemic in Pakistan.

Key Words: COVID-19 Pandemic, Conventional Stock Market Performance, Islamic Stock Market Performance, Closing Price of Conventional Stock Market, Closing Price of Islamic Stock Market, Number of Positive COVID-19 Cases, Number of Positive COVID-19 Fatalities, Number of Positive COVID-19 Recoveries, etc.

Table of Contents

Chapter 1

INTRODUCTION

1.1 Background of the Study

The twenty-first century has seen a variety of worldwide epidemics, including the COVID-19 pandemic, H7N9 virus, Ebola virus, and SARS. The majority of research that looked at how these outbreaks affected the performance of stock markets throughout the world discovered a negative influence (Li et al., 2022). Mnif & Jarboui (2021) claims that the current epidemic, COVID-19, has had detrimental effects on the overall status of the world economy. The epidemic, which has spread to 216 nations worldwide, has an impact on several facets of the world economy, including stock markets. More precisely, pandemic had an impact on stock market performance around the globe. The epidemic inevitably increased risk levels, which led to large losses for investors over relatively limited time period. Second wave of the epidemic spread to certain nations, exacerbating the issue and showing that there is still no cure for the disease. When a result, as the epidemic spreads, there would still be a great deal of uncertainty.

Numerous researchers have performed their studied on assessing the effect that COVID-19 pandemic's astonishing spread has over economy in general and stock markets in particular. Mnif & Jarboui (2021) discusses several researches in this area and emphasizes how crucial it is to make judgments about how Islamic and traditional stock market indexes behave when a pandemic is present. Islamic stock indexes are more effective and competitive than traditional ones because, as Hassan et al. (2022) points out, investors want to invest with increased earnings. Investors having the perception about returns of stock market being unreliable have started to show their interest within learning more about Islamic investment in financial crisis situations like current epidemic. Because the COVID-19 epidemic forces the closure of several industries and because the lock down is harming people's ability to move about and make purchases, the pandemic is having an impact on many economic sectors, including banking, information technology, and retail. Financial markets, where stocks of businesses working within impacted industries are listed, may experience this impact (Hassan et al., 2022).

COVID-19 pandemic is having a severe effect over stock markets generally, its volatility, and the stock prices in these markets (Rabbani et al., 2021). Investors are finding themselves within new

investment conditions due to the repercussions of pandemic. Due to the lack of study in this area and the incomplete understanding of the distinctions between investments based on Shariah and conventional investments, it is currently unclear if pandemic's effect is similar over conventional & shariah-based indexes (Ali et al., 2022). Investors can utilize this as the strategy to diversify for safeguarding personal assets during pandemic if the effect differs from other indices or they could make investment within indexes less affected by pandemic. In Gulf Cooperation Council (GCC) nations, no research has compared how COVID-19 has affected shariah-based & conventional indicators (GCC countries are: Oman, Bahrain, Qatar, Kuwait, Saudi Arabia, and UAE).

Islamic stock indexes are thought to be more robust to a financial crisis than their conventional equivalents, as stated in the study by Setiawan et al. (2022). It is significant to note that cash cannot be traded as an asset in accordance with Shari'ah standards. Islamic products are less dangerous since they are supported by actual economic activity because Islamic indexes essentially only cover the financial sectors linked to supportive activities. Ahmed (2020) asserts that aside from investments made in accordance with Shari'ah, there are in fact distinctions among conventional & Islamic indexes on the basis of financial & screening characteristics. The financial features of the equities that make up Islamic indices include low account receivables and minimal leverage, which lowers vulnerabilities and financial risks linked to crisis times like COVID-19. Because there aren't many researches on this topic, as Adediran et al. (2021) noted, this study tries to explore impact of COVID-19 over Islamic stock markets internationally against conventional ones.

Stock markets and economies of the world are currently experiencing their worst recession since 2008 due to COVID-19 pandemic. For instance, after less than two months following the pandemic's occurrence in U.S., unemployment rate increased to 14.8 percent from 3.7 percent, and the growth rate is projected to decline by 3 percent or more in 2020. Significant expenses of Global Financial Crisis of 2007–2009 have been contrasted with social & economic consequences of pandemic (Nurdany et al., 2021). Financial experts evaluated the COVID-19 pandemics' various financial implications (e.g., Khelifa & Arsi, 2022; Rehman et al., 2021). Investors are naturally searching for safe havens for preserving personal investments or assets during times of greater ambiguity. Comparing to conventional markets, Islamic markets showed their safe haven characteristics during financial crisis of 2008 (Salisu & Sikiru, 2020). It's interesting to note that

preliminary data from COVID-19 indicates neither gold nor crypto currency have served as safe havens (Yarovaya et al., 2021).

The concept of "Islamic finance" is relatively new in comparison to mainstream finance. In fact, the earliest ideas about what would eventually be referred to as Islamic finance only began to develop after Second World War and start of the independence movements within nations of Islamic origin. Islamic finance was a purely academic endeavor for many years. But starting in early 1960s, initial attempts of bringing it about are witnessed, whether they were made by governments or by private citizens. For instance, the Malaysian government supported a fund for pilgrims in 1962 (Abdullahi, 2021), and Al-Najjar (Egyptian Economist) founded a tiny savings bank within farming community of Mit Ghamr in 1963. Islamic finance did not, however, arise as a result of the commencement of the independence movements; rather, it was made possible and given fire by the massive earnings obtained by countries of Gulf Cooperation Council after oil shocks (Bahloul et al., 2021).

Economically speaking, oil embargo imposed in October 1973 by oil-producing nations in Gulf region resulted in a quadrupling of oil prices from October to December of the same year. Due to this shock, money from Western nations was transferred to nations that sell oil. Islamic finance, up until then an experimental idea, became a workable endeavor as GCC member nations quickly gathered riches. Pause within growth of Islamic financial institutions in Gulf nations was largely caused by this shock (El-Khatib & Samet, 2020). Islamic finance has grown significantly over last decade, with an average annual growth rate of double digits (Elshqirat, 2021). As of 2019, assets in Islamic finance amounted to approximately $2523.5 billion, according to ICD Thomson Reuters. It has unquestionably been one of the system's most dynamic elements. The income gathered by the Gulf nations as a result of the increase in oil prices primarily explains this trend (Mirza et al., 2022).

ICD Thomson Reuters estimates that 2601 financial institutions, comprising 1701 funds, 335 takaful and retakaful businesses, 301 banks, and 592 other financial organizations, make up the Islamic finance sector in 2019. Since the early 1990s, interest in Islamic finance has increased significantly. This interest was furthered after the financial crisis of 2007, which, in accordance with some empirical studies, demonstrated that conventional banks were less resilient in comparison to Islamic banks (e.g., Salisu & Shaik, 2022; Yarovaya et al., 2020) and countries

10

which have relied on adoption of Islamic finance within the financial systems have seen less adverse effects. Rabbani (2021) claimed that the "requirements of Islamic law [which, in his opinion, restrict] the exposure [of banks] to the risk that may be caused by toxic loans" can be used to explain this. Indeed, saver is ipso facto an investor, implying that there is no distinction between investment and saves under Islamic finance because both hoarding and investing with an ex-ante fixed income (riba) are forbidden.

Moreover, one of the tenets of Islamic finance is that all financial transactions needs to be supported by the real asset. Absence of a real counterpart poses a risk to the stability of the global economy, according to Elnahass et al. (2021). If it is feasible to purchase without paying or sell without holding, the trade-off between the now and the future might cause macroeconomic imbalances. Every financial transaction in Islamic finance must be consistently supported by a real asset, not an abstract idea or notional asset (Erdoğan et al., 2020). Islamic finance thus aims to maintain a strong connection between the actual economy and finance. According to Saleem et al. (2021), the connection is clear not just because Islamic financial institutions are unable to sell assets they do not own, but also and most importantly because they view their customers as partners. However, both at theoretical and empirical levels, it is unclear if Islamic finance is superior in terms of resilience.

Theoretical literature contains a dispute between those who favor Islamic finance and others who believe it to be nothing more than religious hypocrisy. Islamic finance proponents contend that due to fundamental differences between its business model and conventional financing, it is more effective and stable (El-Khatib & Samet, 2021). Conventional & Islamic finance are distinct in form but identical in content, say some who view Islamic banking as religious hypocrisy (such as Kuran, 1995), who also add that Islamic banks don't have any special benefits on the basis of stability & efficiency. The empirical literature also addresses this issue. Recent research has revealed that Islamic banks are not always more robust than traditional ones (Choi, 2021). The greater durability of Islamic banking is still important today, especially in light of recent COVID-19 pandemic, which abruptly altered the situation and had significant personal, financial, and economic repercussions (Yousaf & Yarovaya, 2022). The pandemic shock's high level of uncertainty caused the world financial markets to lose roughly US$6 trillion in capitalization in only one week, from February 24 to February 28 (Adekoya et al., 2022).

1.2 Problem Statement

While economists and politicians are currently paying more attention to effect that COVID-19 pandemic has over financial markets and economic growth (e.g., Bhutto et al., 2022; Yunita, 2021; Bossman, 2021; Yarovaya et al., 2020), literature has not explored how COVID-19 pandemic impacted Islamic finance. By concentrating on the influence of COVID-19 pandemic on conventional & Islamic stock markets for Pakistan in respect to stock markets, this research seeks to close this gap and solve these challenges. This study adds to the body of empirical work on Islam by giving investors crucial knowledge on the interrelationships between the chosen stock markets, particularly in times of crises. In particular, this study aims to explore the role of COVID-19 pandemic in impacting conventional and Islamic stock markets in Pakistan.

1.3 Gap Analysis

The economy of Pakistan has been impacted by the country's decision to implement a countrywide lockdown and restrictions (such as closing schools and places of employment) in March 2020 to counteract health repercussions (Ali et al., 2022). During the lockdown, people were forced for staying home, which reduced stock market activity. The severity of COVID-19 pandemic's impact on Pakistan stock market is the main issue that has to be addressed. COVID-19 pandemic has been a major crisis for governments in twenty-first century due to the high influence it has on stocks markets and economic conditions (Raza et al., 2022). Meanwhile, exploring the effects of COVID-19 pandemic has been a trending research area for last couple of years. However, there have been few aspects, such as conventional and Islamic stock markets in Pakistan, which are yet to be explored in terms of their influential relationship with COVID-19 pandemic (Ali et al., 2022). Numerous researchers have claimed that COVID-19 pandemic has significantly impacted economic growth and stock markets in various countries of the world (Bossman et al., 2022; Erdoğan et al., 2020). However, there is lack of research concerning the role of Covid-19 pandemic in impacting conventional and Islamic stock markets in Pakistan (Ashraf, 2022), which is a research gap needed to be addressed. Hence, this research emphasizes on investigating the impact of COVID-19 pandemic on conventional and Islamic stock markets in Pakistan.

1.4 Research Questions

Following are the research questions of present study:

1: What is the impact of Covid-19 pandemic on conventional stock market in Pakistan?

2: What is the impact of Covid-19 pandemic on Islamic stock market in Pakistan?

3: Which stock market of Pakistan among conventional stock market and Islamic stock market is impacted more by Covid-19 pandemic?

1.5 Research Objectives

Based on research problem, this study aims:

RO1: To assess the impact of Covid-19 pandemic on conventional stock market in Pakistan.

RO2: To explore the impact of Covid-19 pandemic on Islamic stock market in Pakistan.

RO3: To identify the impact of which stock market of Pakistan among conventional stock market and Islamic stock market is impacted more by Covid-19 pandemic.

1.6 Research Significance

This study brings a variety of fresh concepts to the literature world. First off, as far as we are aware, our research is among the first to examine COVID-19 pandemic's effects on conventional and Islamic stock markets in Pakistan. Previous studies examined how Covid-19 pandemic impacted financial market outcomes and economic conditions in Pakistan. The empirical results of Bhutto et al. (2022) and Rehman et al. (2021) claimed that Covid-19 pandemic negatively impacted financial markets in Pakistan, making the movement of finance within and outside the country difficult. Second, our findings add to the extensive body of research that studies the contribution made by Covid-19 pandemic towards impacting conventional and Islamic stock markets. Third, it contributes to the amount of information about the connection between Covid-19 pandemic and stock markets in Pakistan. This study will recommend that Covid-19 pandemic tends to negatively affect country's stock markets.

1.7 Research Contribution

This study uses a sample of Pakistani stock markets to examine COVID-19 pandemic's effect on conventional and Islamic stock markets of Pakistan. Current study adds to literature in numerous ways. First, it demonstrates the importance of COVID-19 pandemic towards impacting conventional and Islamic stock markets of Pakistan. Second, this research shows how stock markets of Pakistan are adversely affected by COVID-19 pandemic. Importance of present research is for Pakistani economists and regulatory authorities looking to improve the functioning of stock markets within the country. The study's findings make clear how COVID-19 pandemic affects conventional and Islamic stock markets. This study also offers logical support to government of Pakistan towards taking better initiatives for handling COVID-19 pandemic to ensure better functioning of country's conventional and Islamic stock markets. Additionally, present study greatly aids stakeholders of Pakistani stock markets in comprehending how better handling of COVID-19 pandemic may improve performance of conventional and Islamic stock markets. Similarly, present research demonstrates the value of helping research students have a deeper understanding of the subject of literature. Additionally, this study gives the financial management students the support they need to better grasp the connections between the study's variables.

Chapter Summary

This chapter consisted of many different headings in which we covered our topic "impact of Covid-19 pandemic on conventional and Islamic stock markets in Pakistan" in detail. The first part of this chapter explained all variables with the help of literature from previous research studies. Background also covered the relationship between study's variables. In addition, this chapter also included problem statement explaining impact of study variables and their relationship. Research questions and research objectives have also been mentioned in this chapter. Finally, this chapter is concluded with research significance and contribution.

Chapter 2

LITERATURE REVIEW

2.1 Background of COVID-19 Pandemic and its Effect on Pakistan

In December 2019, infectious disease COVID-19, also known as Novel Coronavirus (2019-nCOV), first appeared in Wuhan City, Hubei Province, China. Due to its rapid proliferation compared to other coronavirus types in January 2020, it soon caught the attention of the whole world. The Chinese government's response to new virus was a total lockdown of disease's epicentre, the city of Wuhan, which eventually proved to be a successful strategy for containing the pandemic as a whole in several nations across the world. Under January 23, 2020, whole city was placed on lockdown for controlling spread of disease (Yousaf & Yarovaya, 2022). As of today, there have been recorded 9.1 million positive COVID-19 cases globally, along with 472, 539 fatalities (Salisu & Shaik, 2022). Since the illness first appeared, there have been an increasing fatalities & positive cases. In Europe, disease's spread has slowed. However, in Asia and America, this disease is still spreading quickly. More than 170 nations are impacted by COVID-19, which the WHO labeled a worldwide pandemic on March 11 of this year (Khelifa & Arsi, 2022).

The COVID-19 virus has spread around the world and it has been difficult for government to control it. Like all other countries, government of Pakistan has spent a lot of money on healthcare over the past number of years, and the new epidemic is likely to have an effect on Pakistan economic and stock market development (Setiawan et al., 2022). Concerns over whether there would be another pandemic in the coming months have been widespread in Pakistan. The Pakistani government has decided to implement a new set of lockdown guidelines in order to stop similar outbreaks (Mnif & Jarboui, 2021). Concern over the present economic and financial crisis has been expressed by economists, decision-makers, and intellectuals in Pakistan (Yousaf & Yarovaya, 2022). The rise in market volatility has been connected to the current economic crisis. Fears of a lockdown situation following the latest Covid-19 breakout have significantly slowed GDP growth. Most nations' economy has been impacted by the global recession. The effects of Covid-19 have already been seen in the form of an economic slowdown in Pakistan (Mirza et al., 2022).

A mandatory state of lockdown has been imposed across a number of countries due to the Covid-19 pandemic in an effort to halt the virus' spread and save lives. The sharp decline in consumption

across a variety of industries, including tourism, hospitality, and retail, is among primary COVID-19 effects (Rabbani et al., 2021). Many academics and professionals are still developing literature that will assist readers in comprehending economy's state & most effective strategies for supporting it throughout the pandemic (Hassan et al., 2022). This recession, in contrast to others like the Great Depression, was brought on by a natural consequence of actions taken to slow the disease's growth (El-Khatib & Samet, 2021). The sudden and unexpected action needed to impose transmission restrictions resulted in a significant drop in economic activity (Ali et al., 2022).

Grants and subsidies must be utilized in order to maintain household income stability for supporting the economy (Erdoğan et al., 2020). The study of Rehman et al. (2021) asserted that Pakistan's healthcare system must be capable of treating the sickness in order for economic activity to continue. A compromise between preserving the economy and people's earnings and saving lives will thus be possible. COVID-19 pandemic had negative impacts over Pakistan and rest of the world. COVID-19 pandemic had influenced both traditional markets and IFMs; the size varies across these large sectors. A slight COVID-19 effect was seen on Pakistan's stock market, which is recognized as the developing stock market. This effect has been attributed to national limitations put in place during initial stages of epidemic. It contrasted, however, with situations of developed stock markets (e.g. United States), where COVID-19 pandemic significantly affected the stock market (Setiawan et al., 2022).

According to Abdullahi (2021), the variances in governmental approaches to combating the epidemic might account for differences within observed effect on equity markets. Different information is anticipated to be sent across equity markets by these policy actions. Many governments implemented a range of travel restrictions to stop the virus from spreading, including social seclusion, educational facilities' closure, closures of worship places, stay-at-home or lockdowns restrictions, and inter- & intra-border travel bans. Such pandemic policy initiatives may increase or decrease unemployment, which affects business and economic activity. As a result, corporate earnings are also impacted, which causes share prices to drastically decline. As a result, the slowdown in macroeconomic performance might have an influence on stock performance due to COVID-19 information flows. The impact of information flow from pandemic towards stocks may be investigated using a right approach with enough data and for more than a year into the epidemic (Ashraf, 2022).

2.2 Effect of Epidemic and Pandemics on Stock Markets

Pandemics may have an impact on financial systems due of their enormous economic consequences (Yunita, 2021). Costs associated with epidemics include what health systems must spend on treating affected individuals and preventing virus spread (Li et al., 2022). For expanding capacity and treating patients by both public & private hospitals for handling of growing number of patients who require care and medication, health costs are essential. Health expenses may also be required for stopping virus spread by cleaning and thorough testing. In addition to these factors, economic consequences of pandemic might also include reduced productivity of ill individuals and those who care for them at work, losses from shuttered industries brought on by social segregation policies, losses from exchange rate fluctuations, and trade imbalances (Mnif & Jarboui, 2021). All of these expenses highlight the need for greater expenditures in anticipating pandemics and epidemics, as stated by El-Khatib & Samet (2020). Pandemics can affect stock markets via disrupting financial systems, as stock markets are a part of financial system.

In addition, stock markets fell sharply when the epidemic started, and stock indexes began to see aberrant returns. Pandemic detrimentally impacted emerging economies such as Middle East, Europe, South America, and Asia (El-Khatib & Samet, 2020) in addition to developed markets including the stock markets of France, Spain, Japan, South Korea, Italy, and United States (Li et al., 2022). Number of new and overall COVID-19 confirmed deaths, however, had a negative and considerable effect over stock markets in GCC nations (Rabbani et al., 2021). Since the epidemic negatively impacted financial markets, it may be claimed that COVID-19 pandemic also had a negative impact over market indices, which might include both Islamic and conventional indexes. Numerous academics looked at how Islamic indices performed while comparing with conventional equivalents. Some researchers (Bhutto et al., 2022; Abdullahi, 2021) claimed that there has been no difference within performance of Islamic and conventional indices, while other researchers assert that Islamic indices are more effective than their conventional equivalents.

Stock values in the afflicted nations might drop dramatically due to epidemics (El-Khatib & Samet, 2020). According to Rabbani (2021), SARS pandemic negatively affected capital markets of Vietnam & China and caused a 29% decrease in the stock prices of Taiwanese enterprises involved in the tourist sector. Additionally, Ebola pandemic had hugely impacted market returns in African nations (Salisu & Shaik, 2022). The ZIKA virus pandemic also had a detrimental effect over

17

Brazilian stock market, triggering a sharp decrease within market index and extremely negative returns (Bahloul et al., 2021). These epidemics have a significant negative impact on stock markets in emerging countries, as may be inferred from their effects. This uncertainty, when paired with investor overreaction to the news, may result in big losses in the stock markets of the afflicted nations. Since the COVID-19 pandemic is worldwide and inflicting losses in all economic sectors, it is possible that it will have similar adverse impact on stock markets. However, this impact might be more severe and widespread (Mnif & Jarboui, 2021).

2.3 Islamic and Conventional Indices

Islamic financial institutions adhere to the Koranic teachings in their goals and operations; these organizations are the embodiment of what is referred to as Islamic finance. Interest-free transactions are required in Islamic finance (Riba), and investments in Haram (Islamically banned) businesses like pork and alcohol should be avoided (Rabbani et al., 2021). Traditional financial systems are such where interest is permitted and all sectors are accessible to investment, such limitations do not exist. Stock market, where securities like bonds & shares have been traded, is one element of financial systems; in Islamic financial systems, this element exists but is run in accordance with Shari'ah regulations that forbid interest (Riba) and promote risk sharing (Saleem et al., 2021). Due to this, there are two types of stock markets: conventional and Islamic stock markets, as well as Islamic and conventional indexes. Many Islamic indices have been developed globally, including the MSCI Islamic indices included in the study (Yousaf & Yarovaya, 2022).

The inclusion criteria for the Islamic indexes are different from those of their conventional equivalents. The stock must meet the screening requirements drawn from Shari'ah in order to be included within Shari'ah-based indexes (Bhutto et al., 2022). A firm might be considered a part of one Islamic index and may be excluded from other one due to the fact that not all Islamic indices have the same regulations, however generally speaking, these guidelines may be divided into two categories: core business and financial ratios (Ali et al., 2022). Indicators like liquidity level and debt level may be used to eliminate firms based on their core businesses, while financial ratios may be used to exclude companies depending on their revenue from sources like pork, interest income, and alcohol. With the exception of Oman, which lacks MCSI indices, this research covers Islamic indices for all GCC nations (Khelifa & Arsi, 2022).

Shari'ah-based indices could provide investors with similar return as traditional indices while also providing them with a chance to diversify their portfolio at regular times (Hassan et al., 2022). Islamic indices perform better when calculated using the risk-adjusted return since they are thought to be less hazardous than conventional ones (El-Khatib & Samet, 2021). There are notable distinctions between Western & Islamic indices that could lead to different responses to COVID-19 pandemic. Because leverage and other dangerous actions are prohibited in Islam, for instance, Islamic indexes are thought to be less risky than conventional ones (Ali et al., 2022). However, given the uncertainty surrounding the epidemic, leverage may have been even riskier. Additionally, several businesses that were badly impacted by the epidemic, such as gaming and hotels (Erdoğan et al., 2020), are not included in Islamic indexes. Islamic indices may react to the COVID-19 epidemic differently than conventional indexes because to these variances. The Shari'ah-compliant United Kingdom Dow Jones market index is one illustration of this various reaction, which was shown to be insignificantly influenced by COVID-19 whereas its conventional equivalents were significantly affected by the pandemic (Ahmed, 2020).

2.4 Effect of Covid-19 Pandemic on Stock Markets

Most recent pandemic to affect the planet is Covid-19, which has spread quickly among humans. The COVID-19 pandemic was declared on March 11th, 2020, and it is currently widespread in many nations. Additionally, this pandemic had an impact on stock prices and market volatility, which changed or made the investing climate riskier than it had been previously. In response to this alteration, several investor behaviors have altered, including the frequency of trading and the use of leverage (Hasan et al., 2021). Stock markets fell sharply when the epidemic started, and stock indexes began to see aberrant returns (Yarovaya et al., 2021). Pandemic detrimentally impacted emerging markets such as Middle East, Europe, South America, and Asia in addition to developed markets including the stock markets of the France, Spain, Japan, South Korea, Italy, and United States (Adekoya et al., 2022).

Adediran (2021) found that same detrimental impact was witnessed within stock markets in African nations as well as frontier markets like Romania, Nigeria, and Morocco. Number of new and overall COVID-19 confirmed deaths, however, had a negative and considerable effect on stock markets in GCC nations (Bossman, 2021). Since the epidemic negatively impacted financial markets, it might be claimed that COVID-19 pandemic negatively impacted market indices, which

might include both Islamic and conventional indexes (Bossman, 2021). Numerous academics looked at how Islamic indices performed in comparison to their conventional equivalents. According to some researchers (such as Yarovaya et al., 2020; Salisu & Sikiru, 2020), there have been no difference within performance of Islamic and conventional indices, while other researchers assert that pandemic has highly affected Islamic indices as compared to conventional equivalents (Ali et al., 2022).

Shari'ah-based indices could provide investors with similar return as traditional indices while also providing them with a chance to diversify their portfolio at regular times (Raza et al., 2022). Islamic indices perform better when calculated using the risk-adjusted return since they are thought to be less hazardous than conventional ones. There have been notable distinctions among Islamic and Western indices which could lead to distinguished responses to COVID-19 pandemic. Because leverage and other dangerous actions are prohibited in Islam, for instance, Islamic indexes are thought to be less risky than conventional ones (Elshqirat, 2021). However, given the uncertainty surrounding the epidemic, leverage may have been even riskier. Additionally, several businesses that were badly impacted by the epidemic, such as gaming and hotels (Bossman et al., 2022), are not included in Islamic indexes. Islamic indices may react to the Covid-19 epidemic differently than conventional indexes because to these variances (El-Khatib & Samet, 2021).

The study of Hassan et al. (2022) asserted that compared to conventional indices, Islamic indices are less susceptible and dangerous to market fluctuations during pandemics. Findings of other earlier research suggest that the reaction may be different, with the exception of Ali et al. (2022), which asserted that reaction of conventional & Islamic indices to COVID-19 is same. This study examined the performance differences among conventional & Islamic indices during COVID-19 in GCC markets because no previous research has previously looked at those differences there. The analysis of performance disparities between Islamic and Western stock indexes during pandemic and how such differences might be leveraged to provide diversification opportunity during COVID-19.

Another example is the research conducted by Khelifa & Arsi (2022), which asserted that compared to conventional indices, Islamic indices are less dangerous and susceptible to market fluctuations during pandemics. Furthermore, it demonstrates that COVID-19 pandemic has resulted in Islamic markets outperforming their conventional equivalents. The findings of other

earlier research suggest that the reaction may be different. Collaboration was successful for the second wave. It has been demonstrated that throughout both pandemic waves, the effect's magnitude was larger for conventional stocks. The paper also looks at the overall effects of COVID-19 on several businesses, and it concludes that the most affected sectors are marketing, oil & gas, and commercial banks. Pharmaceuticals and the auto industry are less affected sectors. Findings claimed that once markets have recovered from the first shock, they pick up pace and finally return to their pre-pandemic level. Findings provided detailed insights to policymakers, enabling them to more effectively manage crises in the future by highlighting dynamic links among financial crisis and markets (Bhutto et al., 2022).

In the research, Ahmed (2020) presents their findings. In 1st quarter of 2020, they will utilize information from more than 6,000 businesses in 56 nations. In this instance, they want to ascertain how the COVID-19 instances have affected corporate traits & stock prices. The study's conclusions imply that companies with stronger pre-2020 financial standing, lower pandemic risk, less entrenched leaders, and higher levels of social responsibility activity may have seen a modest pandemic-induced reduction in stock price. Results also show that, in terms of performance, firms with more corporate ownership performed better than those with higher ownership of hedge funds. Erdoğan et al. (2020) explores COVID-19's potential for contagion. They contend that since the start of COVID-19 epidemic, Chinese financial markets have acted as the epicentre of both financial and physical contagion. The study's findings for the examined time period point to several predicted traits of a "flight to safety." The association among Chinese stock markets and Bitcoin has finally developed during the era of the severe financial crisis.

Investors can utilize this as the strategy to diversify for safeguarding personal assets during pandemic if the effect differs from other indices or they could make investment within indexes less affected by pandemic. In Gulf Cooperation Council (GCC) nations, no research has compared how COVID-19 has affected shariah-based & conventional indicators (GCC countries are: Oman, Bahrain, Qatar, Kuwait, Saudi Arabia, and UAE). During COVID-19 pandemic, effect of Islamic Equity Investments (IEIs) was examined by Ashraf (2022) in their study. According to S&P, IEIs continued to perform better than their conventional counterparts throughout 1st quarter of 2020. Due to careful treatment of IEIs and the possible hedging benefits utilized, this claim has been made. The study's findings show that IEIs offer hedging benefits during market downturns, and

they also imply that these benefits come at a premium. In his study, Bossman (2021) evaluates COVID-19 pandemic impact on reaction of financial markets. According to the findings, managers underestimate the risk associated with pandemics in comparison to risk factors required by SEC, which results in a decrease in value of enterprises in this area.

The study of Mirza et al. (2022) examined corporate immunity during COVID-19 pandemic. They want to ascertain how the COVID-19 instances have affected stock prices and corporate traits. COVID-19 pandemic is having a severe effect over stock markets generally, its volatility, and the stock prices in these markets (Rabbani et al., 2021). Investors are finding themselves within new investment conditions due to the repercussions of pandemic. Due to the lack of study in this area and the incomplete understanding of the distinctions between investments based on Shariah and conventional investments, it is currently unclear if pandemic's effect is similar over conventional & shariah-based indexes (Ali et al., 2022). Ahmed (2020) asserts that aside from investments made in accordance with Shari'ah, there are in fact distinctions among conventional & Islamic indexes on the basis of financial & screening characteristics. The financial features of the equities that make up Islamic indices include low account receivables and minimal leverage, which lowers vulnerabilities and financial risks linked to crisis times like COVID-19. Mirza et al. (2022) conclusions imply that companies with stronger pre-2020 financial standing, lower pandemic risk, less entrenched leaders, and higher levels of social responsibility activity may have seen a modest pandemic-induced reduction in stock price. Findings have shown that, in terms of performance, firms with more corporate ownership performed better than those with higher ownership of hedge funds.

In order to reach a global conclusion, Ali (2021) concentrated on analyzing how the COVID-19 epidemic affected returns on both Islamic and traditional stock markets across 15 different countries. Second, the analysis for the study took into consideration data from both before and after COVID-19 pandemic. Through division of pandemic era into four sub-periods, it also offered additional analyses to evaluate the epidemic's changing consequences over time. Finally, unlike the bulk of previous research projects, this one analyses the data and compares the performance of stock market indices before and after the pandemic using sample t-tests in addition to panel pooling OLS regression (Ali et al., 2022). Islamic stock indexes are thought to be more robust to a financial crisis than their conventional equivalents, as

stated in the study by Setiawan et al. (2022). It is significant to note that cash cannot be traded as an asset in accordance with Shari'ah standards. Islamic products are less dangerous since they are supported by actual economic activity because Islamic indexes essentially only cover the financial sectors linked to supportive activities.

Additionally, it was established that the respective means of return for Islamic and conventional indices during epidemic differ statistically from their respective means before pandemic (Ali, 2021). Impacts of COVID-19 on both conventional and Islamic equities were investigated in the Bhutto et al. (2022) research. A real-time examination of firm-level stock and total returns during COVID-19 epidemic is presented by Yunita (2021). They make an effort to explain the unanticipated shifts within COVID-19 trajectory infections' ability to forecast the performance of US stock market. In businesses or sectors where disease transmission is extremely favorable, the losses are significantly greater. The financial and economic effects of COVID-19 pandemic are examined by Choi (2021). This work developed an analytical model that aids in understanding the spatiotemporal patterns of incidence of COVID-19 type disease.

In the study of Bossman (2021), managers underestimate the risk associated with pandemics in comparison to risk factors required by SEC, which results in a decrease in the value of enterprises in this area. Results imply that pandemics are systemically significant to the financial markets and their performance. The most recent pandemic to affect the planet (COVID-19) spread quickly among humans. The COVID-19 pandemic was declared on March 11th, 2020 (Rehman et al., 2021), and it is currently widespread in many nations. Additionally, this pandemic had an impact on stock prices (Yousaf & Yarovaya, 2022) and market volatility (Rabbani et al., 2021), which changed or made the investing climate riskier than it had been previously. In response to this alteration, several investor behaviors have altered, including the frequency of trading and the use of leverage (Bossman et al., 2022).

Economic & financial effects of COVID-19 pandemic were examined by Yunita (2021). This work developed an analytical model that aids in understanding the unanticipated shifts within COVID-19 trajectory infections' ability to forecast performance of U.S. stock markets. In businesses or sectors where disease transmission is extremely favorable, the losses are significantly greater (Elnahass et al., 2021). In the investigation, Elshqirat (2021) examined that COVID-19 sickness has shaken up the world economy and financial markets. Preventive measures like lockdowns and

social isolation have more often than not demonstrated their value, but they come at a price in form of decreased company sales or even permanent closure of some companies. World stock markets had been impacted by financial losses brought on by COVID-19 (Mnif & Jarboui, 2021). Nearly every continent has seen pandemic's effect on world's stock markets, and the Pakistani stock exchange is also among those that have felt adverse impacts of COVID-19 (Mirza et al., 2022).

2.5 Empirical Evidence

In general, numerous researches that looked at how Covid-19 pandemic influenced stock market performance came to the conclusion that daily increases in confirmed cases as a result of the COVID-19 negatively impacted stock returns (Bossman et al., 2022; Rabbani et al., 2021). Reviewing the most recent literature that relates pandemic to stock markets revealed that most of them ignored the distinction between Islamic and conventional indexes and concentrated on stock indices as a whole. This is crucial since it allows for the accurate assessment of the indices' behavior and performance, particularly during the extraordinary pandemic crisis. This might help linked parties, such policymakers and market participants, with the execution of policies and investment plans. In order to close this research gap, the present study is being conducted. To the best of our knowledge, the investigations by Mirza et al. (2022), Yarovaya (2020), Choi (2021), Salisu and Sikiru (2020), and Erdoan et al. (2020) appear to represent the exception. However, there are certain shortcomings in each of these researches.

While Erdoan et al. (2020) studied effects of pandemic on conventional & Islamic stock markets in Turkey. Choi (2021) compared effects of the epidemic on Islamic UK Dow Jones index to its UK equivalent. The same problems plague both Choi (2021) and Erdoan et al. (2020) research. First, because the research are country-specific and solely focus on UK and Turkish stock markets, their conclusions cannot be extrapolated to other international markets. Second, they investigate an impact of the pandemic over a single time, as many studies do, which appears insufficient for assessing effect of COVID-19. In order to better understand how COVID-19 impacts altered over time, Li et al. (2022) divided the sample period of COVID-19 into three sub-samples and examined impacts of epidemic on emerging stock markets.

Salisu and Sikiru (2020) investigated an effective buffer against the risk associated with pandemics and epidemics. They discover, on average, that Asia-Pacific Islamic stocks have greater potential for hedging against uncertainty than do conventional ones. The influence of pandemic over

spillover among Islamic & conventional stocks and bonds market indices of the Dow Jones Market is also examined by Yarovaya et al. (2021), and they offer empirical support for the pandemic safe haven characteristics of Islamic equities and bonds. Recently, Mirza et al. (2022) studied safe-haven features of Islamic equities compared to G7 conventional equivalents. They discover that throughout the epidemic, Islamic equities developed as reliable safe-haven asset for G7 stock markets.

Salisu and Sikiru (2020) and Yarovaya et al. (2021) both have the virtually same goal of determining if Islamic equities may be used as safe-haven investments during a pandemic. Primary variations among such research studies might be seen in the methodologies and dataset used. Two composite stock indices and a predictability method make up Salisu and Sikiru (2020) dataset. However, it appears that none of these research, using the methods used in the current study, analyze the influence of pandemic on Islamic vs. traditional stock market results. As a matter of fact, there aren't many studies that look at how the Islamic stock market indexes perform during COVID-19, which is a problem that still needs additional empirical research. As a result, the objective of this study is to objectively evaluate and contrast an effect of COVID-19 on worldwide return of Islamic stock market indexes with traditional indices.

Islamic indices perform better when calculated using the risk-adjusted return since they are thought to be less hazardous than conventional ones. There have been notable distinctions among Islamic and Western indices which could lead to distinguished responses to COVID-19 pandemic. Because leverage and other dangerous actions are prohibited in Islam, for instance, Islamic indexes are thought to be less risky than conventional ones (Elshqirat, 2021). Khelifa & Arsi (2022) asserted that compared to conventional indices, Islamic indices are less dangerous and susceptible to market fluctuations during pandemics. Furthermore, it demonstrates that COVID-19 pandemic has resulted in Islamic markets outperforming their conventional equivalents. The findings of other earlier research suggest that the reaction may be different. Collaboration was successful for the second wave. It has been demonstrated that throughout both pandemic waves, the effect's magnitude was larger for conventional stocks. The study of Hassan et al. (2022) asserted that compared to conventional indices, Islamic indices are less susceptible and dangerous to market fluctuations during pandemics. Shari'ah-based indices could provide investors with similar return

as traditional indices while also providing them with a chance to diversify their portfolio at regular times (Raza et al., 2022).

In general, numerous research studies that looked at how COVID-19 pandemic influenced stock market performance came to the conclusion that daily increases in confirmed cases as a result of COVID-19 negatively impacted stock returns. Reviewing the most recent research that relates pandemic to stock markets reveals that most of them ignore the distinction between Islamic and conventional indexes and instead concentrate on stock indices as a whole. This is crucial since it allows for the analysis of the behavior and performance of the indexes, particularly during the extraordinary pandemic crisis. This might help linked parties, such policymakers and market participants, with the execution of policies and investment plans (Setiawan et al., 2022). In order to better understand how effect of pandemic altered over time, Yarovaya et al. (2021) divided sample period of COVID-19 into three sub-samples and looked at the impact of epidemic on emerging stock markets. Since no prior studies have investigated at the performance variations between Islamic and conventional indices during COVID-19 in GCC markets, this study is the first to do so. The study's possible addition to the field is the investigation of performance differences between Islamic and Western stock indexes throughout pandemic and how such differences may be used for giving a diversification opportunity for pandemics like COVID-19.

Stock markets fell sharply when the epidemic started, and stock indexes began to see aberrant returns (Yarovaya et al., 2021). Pandemic had an impact on stock prices and market volatility, which changed or made the investing climate riskier than it had been previously. In response to this alteration, several investor behaviors have altered, including the frequency of trading and the use of leverage (Hasan et al., 2021). Since the epidemic negatively impacted financial markets, it might be claimed that COVID-19 pandemic negatively impacted market indices, which might include both Islamic and conventional indexes (Bossman, 2021). However, given the uncertainty surrounding the epidemic, leverage may have been even riskier. Additionally, several businesses that were badly impacted by the epidemic, such as gaming and hotels (Bossman et al., 2022), are not included in Islamic indexes. Islamic indices may react to the Covid-19 epidemic differently than conventional indexes because to these variances (El-Khatib & Samet, 2021). The findings of other earlier research suggest that the reaction may be different, with the exception of Ali et al. (2022), which asserted that reaction of conventional & Islamic indices to COVID-19 is same.

26

While Erdoan et al. (2020) studied pandemic's impact on Islamic and conventional stock markets in Turkey. Khelifa & Arsi (2022) compared influence of the epidemic on Islamic UK Dow Jones index to its UK equivalent. The same problems plague both Khelifa & Arsi (2022) and Erdoan et al. (2020) research studies. First, because the research are country-specific and solely focus on UK and Turkish stock markets, their conclusions cannot be extrapolated to other international markets. Second, they investigate effects of the pandemic over a single time, as many studies do, which appears insufficient to assess the impact of COVID-19. Raza et al. (2022) investigated whether the two composite stock indexes, DJCA & DJIM, which act as stand-ins for Asia-Pacific Islamic and traditional stock price indices, respectively, can provide effective protection against uncertainty brought on by pandemics and epidemics. They discover, on average, that Asia-Pacific Islamic stocks have greater potential for hedging against uncertainty than do conventional ones.

Yarovaya et al. (2020) provided empirical support for the pandemic safe haven characteristics of Islamic equities and bonds. They discover that during the pandemic, spillovers among Islamic & conventional stock markets grow larger and that Sukuk may be utilized to hedge conventional bond markets. Recently, Ali et al. (2022) discovered that throughout the epidemic, Islamic equities developed as a reliable safe-haven asset for G7 stock markets. Salisu & Shaik (2022) and Arif et al (2022) all have the virtually same goal of determining if Islamic equities may be used as safe-haven investments during a pandemic. Primary variations among such research studies might be seen in the methodologies and dataset used. The study of Elshqirat (2021) looks at family ownership during COVID-19 in their research. They look at how family involvement in ownership and governance affects the businesses' ability to make money. The COVID-19 epidemic was utilized as the study's sample for Italian enterprises. The study found that throughout the pandemic, businesses with controlling owners on their boards of directors outperformed their rivals. Lockdowns and social isolation are examples of preventive measures that have frequently shown their worth in some businesses. Financial losses caused by COVID-19 had affected global stock markets (Mnif & Jarboui, 2021).

Although COVID-19 epidemic impacted both traditional markets and IFMs, the size varies across these large sectors. A slight COVID-19 effect was seen on Pakistan's stock market, which is considered to be a developing stock market. This effect has been attributed to national limitations

put in place during the early stages of the epidemic. This contrasted, however, with circumstances of developed stock markets, such as those in United States, where COVID-19 epidemic had a significant effect on markets. This information provides a general idea of how the COVID-19 outbreak has affected global equity markets (Mnif & Jarboui, 2021). According to Ashraf (2022), the variances in governmental approaches to combating the epidemic might account for differences within observed effect over equity markets. Different information is anticipated to be sent across equity markets by these policy actions. Theoretically, financial markets respond to information, which is anticipated to make them efficient, according to Adekoya et al. (2022).

The study of Bhutto et al. (2022) examined the effects of COVID-19 on conventional and Islamic stocks. A panel regression technique has been applied in this work. The research indicates a detrimental relationship between Covid-19 and stock (both Islamic and conventional). The association between Covid-19 and stock (both Islamic and conventional), after dividing the data into the first and second waves, maintains the same (negative) in the case of the first wave. On the other hand, the partnership worked out well for the second wave. The extent of the effect is shown to be greater for conventional stocks during both pandemic waves. Additionally, the report examines the overall impact of Covid-19 on several industries, determining that commercial banks, oil and gas exploration, and marketing firms are the most impacted industries. The least impacted industries include pharmaceuticals and cars. According to the study, once markets have adjusted to the first shock, they begin to gather speed and eventually reach their pre-pandemic level (emergence of a pandemic). By emphasizing the dynamic relationships between markets (conventional and Islamic) and the financial crisis, the study offered complete insights for market regulators and policymakers, enabling them to more effectively regulate crises in the future (Bhutto et al., 2022).

The study of Ali et al. (2022) has focused on examining the effects of the Covid-19 pandemic on the returns on Islamic and conventional stock markets across 15 different nations and comes to a worldwide conclusion. Second, both before and during the Covid-19 pandemic were taken into account while doing the analysis for the study. Furthermore, it provided additional analysis to assess the evolving effects of the pandemic through time by breaking the pandemic era into four sub-periods. Finally, in contrast to the majority of other research studies, this one uses sample t-tests in addition to panel pooled OLS regression to analyze

the data and compare the performance of stock market indexes before and after the pandemic. Additionally, it has determined Islamic and conventional indices' respective means of return during the pandemic differ statistically from their respective means before to the pandemic (Ali et al., 2022).

2.6 Theoretical Background

In accordance to Bahloul et al. (2021), situational information flow theory (SIFT), financial markets (assets) may retrieve causal links since they share information with one another. The SIFT generates quantified intrinsic information shared by two random variables by combining Pearl's statistics with Odegard's philosophy. The conventional and Islamic equity markets have gotten sufficient attention, but they have not been able to adequately reflect contemporary financial crises like the COVID-19 epidemic period. Similar findings were reached with Saleem et al. (2021), who exclusively looked at Shariah-compliant stocks. The corpus of knowledge contains records for a few empirical studies examining COVID-19 effects on financial markets. The first body of scholarship covering the COVID-19 epidemic era has focused on bond markets, fiat currencies, cryptocurrencies, environmental social and governance (ESG) indices, commodities markets, spillover and asset allocation, and so on. Stock markets will have enormous information structures as a result of the frothy market dynamics during the chaotic trading phase of COVID-19, which, according to Adediran et al. (2021), may lead to negative bubbles. In line with these destructive bubbles, it is crucial to measure information flow in the financial markets. Elshqirat (2021) found that the same detrimental effect was seen in stock markets in Western Pacific and African nations as well as frontier markets like Morocco, Nigeria, and Romania.

Theoretical literature contains a dispute between those who favor Islamic finance and others who believe it to be nothing more than religious hypocrisy. Islamic finance proponents contend that due to fundamental differences between its business model and conventional financing, it is more effective and stable (El-Khatib & Samet, 2021). Conventional & Islamic finance are distinct in form but identical in content, say some who view Islamic banking as religious hypocrisy (such as Kuran, 1995), who also add that Islamic banks don't have any special benefits on the basis of stability & efficiency. The empirical literature also addresses this issue. Recent research has revealed that Islamic banks are not always more robust than traditional ones (Choi, 2021). The greater durability of Islamic banking is still important today, especially in light of recent COVID-

19 pandemic, which abruptly altered the situation and had significant personal, financial, and economic repercussions (Yousaf & Yarovaya, 2022). The pandemic shock's high level of uncertainty caused the world financial markets to lose roughly US$6 trillion in capitalization in only one week, from February 24 to February 28 (Adekoya et al., 2022).

Theoretically, financial markets respond to information, which is anticipated to make them efficient, according to (Elshqirat, 2021). According to Elnahass et al. (2021) situational information flow theory (SIFT), financial markets (assets) may retrieve causal links since they share information with one another. The SIFT generates quantified intrinsic information shared by two random variables by combining Pearl's statistics with Odegard's philosophy. There is reciprocal information exchanged by the variables if the link between two random variables might be determined by examining the extent to which one of the variables could learn the state of the other through observation. Since stock markets cannot influence Covid-19 case counts in the context of this study, a one-way flow is taken into consideration. According to Mnif & Jarboui (2021), complexity of investors in pandemic could even lead to opportunities for diversification among conventional & Islamic stock markets.

2.7 Research Framework
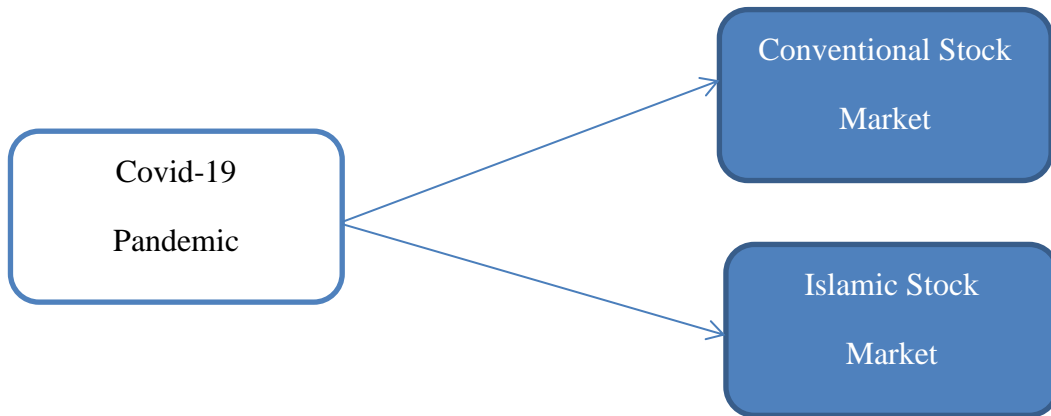
2.8 Research Hypotheses

Following are the research hypotheses of present study:

H1: Covid-19 pandemic has negative impact on conventional stock market in Pakistan.

H2: Covid-19 pandemic has negative impact on Islamic stock market in Pakistan.

Chapter 3

RESEARCH METHODOLOGY

Introduction

This chapter explains a methodology used for exploring the effect of COVID-19 on Islamic and conventional stock markets in Pakistan. The process to gather and interpret data will be covered in this section (Flick, 2015). It will explore the connection between COVID-19, Islamic stock market performance, and conventional stock market performance by putting an emphasis on design, strategy, population and sampling, data collection and analysis, etc. The measuring of research variables will also be covered in this section.

3.1 Research Design

Research design is a strategy which specifies how to gather and analyze the required data. A study design essentially describes the procedures researchers take to gather data, analyze it, and make recommendations in light of their results (Kumar, 2019). Among other designs, a research project may use qualitative, quantitative, or mixed approaches. A technique called qualitative methodology evaluates a person's emotions and experiences. Quantitative methodology is a form of technique that examines statistical variations between variables. Meanwhile, quantitative methodology refers to a form of approach that looks at participants' attitudes as well as statistical disparities across variables (Kumar, 2019). This study used secondary data sources and based on a qualitative research method.

3.2 Research Type

Since the primary goal of this study was to explore the connections between COVID-19, Islamic stock market performance, and conventional stock market performance, the analysis was correlational in nature.

3.3 Time Horizon

The current study employed observational time series data including first half of 2020 (first four months of 2020), making it a time series data study.

3.4 Research Philosophy

Positivism is the belief that data gathered via observations may be trusted to be accurate (McCusker & Gunaydin, 2015). The research philosophy for this study was positivism as a result.

3.5 Research Strategy

A positive paradigm and a qualitative approach were used to assure objectivity. The development of hypotheses based on the literature was the first step in the deductive process utilized in the current investigation. Following that, research method was used to test the generated hypotheses. For information to support or contradict the theories put out, current literature was examined. This method entailed collecting data, accumulating and evaluating it, as well as creating and formulating hypotheses.

3.6 Unit of Analysis

The present study's unit of analysis was the Islamic and conventional stock markets of Pakistan.

3.7 Population

The term "population" refers to a study's intended audience (Pandey & Pandey, 2021). The Islamic and conventional stock markets of Pakistan were the targeted sector for data collecting. The researcher gathered data from Pakistan Stock Exchange and official portal of Government of Pakistan over first quarter of 2020 (on daily basis). The sample for this study consisted of data collection relevant to Islamic and conventional stock markets of Pakistan for first quarter of 2020.

3.8 Sample Size

A research cannot be conducted without employing an optimal sample size since this is required for correct population representation. Sample of data for Islamic and conventional stock markets of Pakistan for first quarter of 2020 (on daily basis) was selected to fairly represent the whole population. A sample of first quarter of 2020 (119 observations) has been chosen for data collecting. Time series data for the variables (COVID-19, Islamic stock market performance, and conventional stock market performance) from first half of 2020 were acquired as a sample in order to analyze the relationship between study variables. Since more data for analytical purposes cannot be included in time restriction allowed for this research's completion, only data from first half of 2020 was used in current research.

3.9 Sampling Technique

In current research, convenience sampling technique was used to collect data which was easily accessible from Pakistan Stock Exchange and official portal of Government of Pakistan. This sampling approach successfully handled data collecting issues, which undoubtedly helped the data collection process go smoothly. The fact that the data gathering procedure went off without a hitch shows that convenience sampling has surely aided in acquisition of important data. Information on COVID-19 and performance for Islamic and conventional stock markets of Pakistan during first quarter of 2020 (on daily basis) was gathered using convenience sampling technique.

3.10 Data Collection Method

The principal data sources for this investigation were Pakistan Stock Exchange and official portal of Government of Pakistan. The following process was used to collect the data:

3.10.1 Data Selection

Data for the study's variables were carefully picked because of the short time frame required to finish the data gathering method on schedule. From first quarter of 2020 (on daily basis), data on COVID-19, Islamic stock market performance, and conventional stock market performance were selected.

3.10.2 Source of Data Collection

From first quarter of 2020 (on daily basis), secondary sources such as Pakistan Stock Exchange and official portal of Government of Pakistan were used to compile information on COVID-19, Islamic stock market performance, and conventional stock market performance. Daily closing prices of index were gathered from Pakistan Stock Exchange data portal. Data of COVID-19 cases was gathered from official portal of Government of Pakistan. Data of first quarter of 2020 was collected on a daily basis from both sources.

3.11 Data Analysis

The study's hypotheses were assessed using data analysis (based on a variety of statistical tests) following the collecting of the data. For a period of ten years, unbalanced data for COVID-19, Islamic stock market performance, and conventional stock market performance were balanced by averaging the data. The relationship between COVID-19, Islamic stock market performance, and

conventional stock market performance was calculated annually using the STATA Software. Additional data analysis including determining the direction and intensity of the association between COVID-19, Islamic stock market performance, and conventional stock market performance in Pakistan were done using the STATA Software. Panel data were employed in this study, and multiple linear regression analysis was used to look at how the study's variables related to one another.

3.12 Analytical Model

3.12.1 Time Series Data Analysis

The time series estimation method was used to explore a connection between COVID-19, Islamic stock market performance, and conventional stock market performance. Cross-sectional and time series methods mostly use time series data methodologies. Panel data are often used because of its value in terms of low co linearity between variables. One example of a strategy that provides greater space by permitting the execution of several robustness tests is the time series data estimation approach. When examining relationships between variables, this method also yields conclusions that are generalizable. For conducting fruitful research, time series data approach was chosen over cross-sectional and panel data approaches (Mackey & Gass, 2015).

3.12.2 Descriptive Statistics

119 observations for each variable for first quarter of 2020 were examined using descriptive statistics to determine the mean and standard deviation.

3.12.3 Correlation Analysis

Correlation analysis was used to evaluate the correlation between two or more variables. One can ascertain the nature, magnitude, and direction of relationship among two or more variables with the use of correlation analysis.

3.12.4 Regression Analysis

As a statistical test, regression analysis was used to determine the degree to which two or more variables are related to one another.

3.13 Research Model

$$PRICE_{it} = \alpha + \beta 1 POSITIVE_{it} + \beta 2 FATAL_{it} + \beta 3 RECOVER_{it} + \varepsilon_{it}$$

Where:

$PRICE_{it}$ = Daily Closing Price of Islamic and Conventional Stock Markets

$POSITIVE_{it}$ = Daily Number of Positive COVID-19 Cases

$FATAL_{it}$ = Daily Number of COVID-19 Fatalities

$RECOVER_{it}$ = Number of Daily COVID-19 Recoveries

ε_{it} = Error Term

β = Beta

3.14 Variables Measurement

3.14.1 Independent Variable

$POSITIVE_{it}$

It was measured by the daily frequency of positive COVID-19 cases

This proxy was adopted from Ahmed (2020)

$FATAL_{it}$

It was measured by the frequencies of daily COVID-19 fatalities

This proxy was adopted from Ahmed (2020)

$RECOVER_{it}$

It was measured by the frequency of daily recovered COVID-19 cases

This proxy was adopted from Ahmed (2020)

3.14.2 Dependent Variable

$PRICE_{it}$

It was measured by the daily closing price of the stock market index

This proxy was adopted from Ahmed (2020)

Chapter 4

DATA ANALYSIS AND FINDINGS

Introduction

The researcher explains the findings and examination of data gathered from secondary sources in this part. The reader will have a thorough understanding of the whole body of data, how it was organized, and where it was gathered at the end of this part. Data input and data coding have served as the foundation for this data analysis.

4.1 Data Analysis

4.1.1 Descriptive Statistics

Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
PRICE	119	25473.61	2812.642	20043.89	30058.45
POSITIVE	119	26316.62	48820.80	0.000000	192970.0
FATAL	119	530.6891	969.3377	0.000000	3903.000
RECOVER	119	9272.882	18644.43	0.000000	81307.00

Descriptive statistics have shown that average price of stock index has remained 25,473.61 points during first quarter of 2020. Average number of positive cases during first quarter of 2020 was 26,317. Average number of fatal cases was 531 during first quarter of 2020. Average recoveries were 9,273 on daily basis during first quarter of 2020. Meanwhile, maximum index price was 30,058 points where minimum index price was 20,044 during first quarter of 2020. Maximum number of positive cases during first half of 2020 was 192,970. Maximum number of fatal cases was 3903 and maximum number of recoveries was 81,307 during first quarter of 2020. Lowest index price was 20,044 during the first half of 2020. However, this analysis was drawn based on 119 observations (119 days in first quarter of 2020).

4.1.2 Correlation Analysis

Correlation is a statistical test which is used for testing the association among two or more than two variables. Following are the findings of correlation analysis:

Correlation Analysis (For Islamic Stock Market)

	PRICE	POSITIVE	FATAL	RECOVER
PRICE	1.0000			
POSITIVE	-0.2423	1.0000		
FATAL	-0.1955	0.7816	1.0000	
RECOVER	-0.2688	0.8203	0.8152	1.0000

Correlation between positive cases, recoveries, fatalities, and closing price are significant at a level of 5% significance. Findings demonstrated the negative correlation between closing price of Islamic stock market and number of positive cases with a magnitude of .2423. In addition, findings demonstrated the negative correlation between closing price of Islamic stock market and number of fatal cases with a magnitude of .1955. Finally, findings demonstrated the negative correlation between closing price of Islamic stock market and number of recovered cases with a magnitude of .2688.

Correlation Analysis (For Conventional Stock Market)

	PRICE	POSITIVE	FATAL	RECOVER
PRICE	1.0000			
POSITIVE	-0.2941	1.0000		
FATAL	-0.2015	0.7816	1.0000	
RECOVER	-0.2813	0.8203	0.8152	1.0000

Correlation between positive cases, recoveries, fatalities, and closing price are significant at a level of 5% significance. Findings demonstrated the negative correlation between closing price of conventional stock market and number of positive cases with a magnitude of .2941. In addition, findings demonstrated the negative correlation between closing price of conventional stock market and number of fatal cases with a magnitude of .2015. Finally, findings demonstrated the negative correlation between closing price of conventional stock market and number of recovered cases with a magnitude of .2813.

4.1.3 Regression Analysis

Regression Analysis (For Islamic Stock Market)

PRICE	Coef.	Std. Err.	t	P>|t|
POSITIVE	-0.6182	0.1078	-2.87	0.002
FATAL	-0.3716	0.1241	-2.39	0.013
RECOVER	-0.1285	0.1382	-2.41	0.028
C	2.3171	1.0719	8.176	0.000
R-Squared	0.5127		**F-Statistic**	6.2715
Adjusted R-Square	0.4701		**Prob(F-Statistic)**	0.002
S.E. of Regression	0.7196		**Durbin Watson**	1.381

The table above shows that p values of positive cases, fatalities, and recoveries are 0.002, 0.013, and 0.028 (which are less than 0.05) respectively, showing that closing price of Islamic stock market is significantly affected by the number of fatal, positive and recovered cases. The coefficient of determination is 0.5172 which means 51.72% of variation in dependent variable is explained by independent variables, indicating that model has been a good fit. Findings from

regression analysis proves the significant negative relationship between closing price of Islamic stock market and the number of positive, fatal, and recovered cases.

Regression Analysis (For Conventional Stock Market)

PRICE	Coef.	Std. Err.	t	P>|t|
POSITIVE	-0.3181	0.1512	-2.45	0.004
FATAL	-0.2947	0.1103	-2.21	0.009
RECOVER	-0.1618	0.1408	-2.37	0.019
C	1.825	1.2163	8.715	0.000
R-Squared	0.5361		**F-Statistic**	7.0172
Adjusted R-Square	0.5012		**Prob(F-Statistic)**	0.002
S.E. of Regression	0.6833		**Durbin Watson**	1.574

The table above shows that p values of positive cases, fatalities, and recoveries are 0.004, 0.009, and 0.019 (which are less than 0.05) respectively, showing that closing price of conventional stock market is significantly affected by the number of positive, fatal, and recovered cases. The coefficient of determination is 0.5361 which means 53.61% of variation in dependent variable is explained by independent variables, indicating that model is a good fit. Findings from regression analysis proves the significant negative relationship between closing price of conventional stock market and number of positive, fatal, and recovered cases.

4.2 Data Findings

Data Findings

Hypothesis	Statement	Accepted/Rejected
H1	COVID-19 pandemic has negative impact on conventional stock market in Pakistan.	Accepted
H2	COVID-19 pandemic has negative impact on Islamic stock market in Pakistan.	Accepted

Chapter 5

CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

The goal of this study was to evaluate the connection between COVID-19 pandemic, Islamic stock market performance, and conventional stock market performance in Pakistan. Pakistan Stock Exchange and official portal of Government of Pakistan were secondary sources of data that were employed for data collection. To assess the relationship between the variables in this study, data of first quarter of 2020 (on daily basis), data on COVID-19, Islamic stock market performance, and conventional stock market performance were selected. The researcher has concentrated on outlining how this research relates to the contemporary world and situation, as well as how it may be improved in the future. A scale is established that spans from 5% of the significance level (p value). The hypotheses (H1 and H2) were accepted or rejected based on this scale. Focusing on the p value for each variable's significance level, H1 and H2 were acknowledged as being significant. The significant negative association among COVID-19 pandemic and Islamic stock market performance was proved by correlation and regression analysis.

Hypothesis 1 'COVID-19 pandemic has negative impact on Islamic stock market in Pakistan.' has been accepted in correlation and regression analysis. Findings of the present research through correlation and regression analysis have proved that COVID-19 pandemic was negatively correlated with Islamic stock market in Pakistan, accepting H1. Significant relationship between COVID-19 pandemic and Islamic stock market in Pakistan (findings of present research) is also supported by the findings of Nomran & Haron (2021), which also indicates the significant relationship between COVID-19 pandemic and Islamic stock market.

Hypothesis 2 'COVID-19 pandemic has negative impact on conventional stock market in Pakistan.' has been accepted in correlation and regression analysis. Findings of the present research through correlation and regression analysis have proved that COVID-19 pandemic was negatively correlated with conventional stock market in Pakistan, accepting H2. Significant relationship between COVID-19 pandemic and conventional stock market in Pakistan (findings of present research) is also supported by the findings of Nomran & Haron (2021), which also indicates the significant relationship between COVID-19 pandemic and conventional stock market.

5.2 Conclusion

The prime objective of this study was to analyze the relationship between COVID-19 pandemic, Islamic stock market performance, and conventional stock market performance in Pakistan. In this study, COVID-19 pandemic was considered as independent variable. However, Islamic and conventional stock market performance was used as dependent variable. This study used secondary sources of data (Pakistan Stock Exchange and official portal of Government of Pakistan) for conducting this research in order to identify the significant relationship between variables of this study. Data regarding COVID-19 pandemic, Islamic stock market performance and conventional stock market performance for the first quarter of 2020 (on daily basis) was collected for assessing the relationship between study variable. STATA software was used based on statistical tests (correlation and regression analysis) for proceeding data analysis and identifying the extent and direction of relationship between COVID-19 pandemic, Islamic stock market performance and conventional stock market performance in Pakistan.

COVID-19 pandemic (number of positive, fatal, and recovered cases) was empirically tested with Islamic and conventional stock market performance (closing price of Islamic and conventional stock market) based on the data of first quarter of 2020 (on daily basis) and found correlation between them. With regards to the findings of correlation analysis, there exists a negative relationship between COVID-19 pandemic and Islamic and conventional stock market performance. Furthermore, regression analysis has revealed a significant negative relationship between COVID-19 pandemic (independent variable) and Islamic and conventional stock market performance (dependent variable) in Pakistan. Based on the findings and results, it was concluded that performance of both Islamic stock market and conventional stock market have declined as a result of COVID-19 pandemic in Pakistan.

5.3 Research Limitations

Limitations are the restrictions which are faced by any researcher while working on a research study. In this study, very few limitations were experienced by the researcher, as some of them were limited sample size, limited time frame, etc. The study's time constraint was undoubtedly a substantial challenge. Regarding the period allotted for completing this research study, additional time was needed to compile the data and conduct a thorough analysis of the significant correlation between COVID-19 pandemic, Islamic stock market performance, and conventional stock market

performance in Pakistan. As more time was required to finish this research than was now available, the time period available for doing this investigation was extremely constrained. Future research on this subject should involve more historical data from quarters of 2020 and 2021 in order to conduct in-depth studies and better understand the connection between study's variables. Owing to time constraints, a larger time frame must be given to the researcher in order to collect data from different quarters of 2020 and 2021, which was not included in this study. This study's lack of using a mediating or moderating variable was another limitation. In order to have a more accurate and in-depth analysis of the link between COVID-19 pandemic, Islamic stock market performance, and conventional stock market performance in Pakistan in Pakistan, mediating or moderating variable could be used.

5.4 Recommendations and Future Research

Most aspects were well addressed in present research, as few improvements could be brought within this research for enhancing its effectiveness. Such improvements could be made in terms of increasing time duration, increasing sample size, etc. Future extensions of the time limit are possible. A suitable time range might assist the researcher in gathering historical data from quarters of 2020 and 2021. A longer time horizon could provide the researcher the chance to be motivated and start gathering data in 2019 so they can conduct a more thorough analysis of the link between COVID-19 pandemic, Islamic stock market performance, and conventional stock market performance in Pakistan. Increased usage of historical data might enhance the validity and dependability of the overall study project. The correlation between COVID-19 pandemic, Islamic stock market performance and conventional stock market performance in Pakistan has been clearly shown through findings and outcomes. Most of the parts of the subject are already addressed in this study since data show that COVID-19 pandemic has negatively impacted Islamic stock market performance and conventional stock market performance in Pakistan. In addition, researchers may find it helpful to have in-depth investigations to investigate more about this literature subject if they include a mediating or moderating variable.

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