THE IMPACT OF COVID-19 ON STOCK MARKETS: A SYSTEMATIC LITERATURE REVIEW

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Abstract

This research investigates the disruptive impact of COVID-19 on the financial performance of stock markets in the United States of America (USA), Asia (China, Japan, South Korea, India), and the Middle East and North Africa (MENA) region context being the sample region. The research aim is to reveal the impact of COVID-19 on stock market returns in the sample regions. prior research suggests that 74 percent (Rakshit & Neog, 2022) of the global stock markets reported negative stock returns, increased volatility, and cumulative abnormal returns during the pandemic. The research considers an empirical approach that employs event studies, panel data regression models, and paired sample t-tests. In so doing this research considers the objective impact of the COVID-19 phenomenon. The results suggest that only 5 percent suggested stock returns indicated positive effects on stock market return and volatility, while 21 percent indicated mixed positive and negative impacts. The pandemic led to negative stock market returns in the sample region. The research reveals the negative impact was primarily due to government intervention in stock markets. The research adds support to current findings that encourage governments to swiftly adopt proactive measures to minimize the disruptive impact of stock markets.

Keywords: Stock Market, COVID-19, Pandemic, Literature Review

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1. INTRODUCTION

The emergence of the COVID-19 pandemic in early 2019 in China significantly affected global markets. The daily increase in global death rates due to COVID-19 globally affected virtually all aspects of the global economy and human health. The contagious nature of COVID-19 was due to its easy transmission among humans. Hence, it caused a severe impact on the global economy, creating turbulence in the stock market, a financial crisis, economic contraction, and several household consequences (Barakat et al., 2022; Oudat, 2022).

Consequently, COVID-19 was declared as a global pandemic by the World Health Organization, (WHO), on March 11, 2020, with reported cases reaching 4,014,436 as of March 5, 2020, globally. Shortly after the WHO declaration, there was a globally concerted effort in introducing several laws and policies to mitigate the spread and impact of the pandemic. The pandemic created a global

effort to restrict travel, particularly air travel (Phan & Narayan, 2020; Ullah, 2023).

The global enactment of the laws and policies lead to substantial effects on the global stock markets. Likewise, disrupting the goods and service delivery system. In between, several scholars claimed that the fast spreading of the virus over countries of the world in the shortest possible time plus the enacted laws and restrictions led to a crash in the global financial markets, economy, and as well as the increase in the risk of healthcare system collapse, most especially in developing country (Beirne et al., 2021; Demir & Danisman, 2021).

The impact of the pandemic was global in nature (Barua & Barua, 2021). Curbing the spread of the disease was challenging due to its asymptomatic nature, i.e., does not show disease symptoms. Hence, it causes a severe impact on the global economy, creating turbulence in the stock market, financial crisis, economic contraction, and several household consequences.

This research aims to investigate how the coronavirus pandemic affects the stock market return of four major regions: 1) the United States of America (USA), 2) the Gulf Cooperation Council (GCC), 3) the Middle East and North Africa (MENA), and 4) Asia. We will analyze the trends, patterns, and correlations of the stock market indices of these regions and examine the factors that influence their performance. The research will contribute to the literature on the economic impact of COVID-19 and provide insights for policymakers and investors. Hence, the primary research question of this study is:

RQ: Does the coronavirus pandemic (COVID-19) affects the USA, GCC, MENA, and Asia countries' stock market return?

The remaining structure of the paper is as follows. Section 2 discusses the literature review. Section 3 discusses the methodology employed in the research. Section 4 synthesizes the results of the study. Section 5 discusses the implications of the study and the conclusion is provided in Section 6.

2. LITERATURE REVIEW

The theoretical background of this research pertains to the areas of financial markets and market performance. The factors of market performance and market return were considered when reviewing the literature. According to Hartojo et al. (2020), this crisis due to the COVID-19 crisis affects all stages of the supply chain including production. However, the level of impact across different countries was variable. The previous author claimed that the impact was enormous in China, Europe, Japan, and the USA, affecting their supply chain. As such this may be because these countries were one of the foremost economies of the world, which other economies rely on. Therefore, it may be correct to say that the impact of the pandemic affects not just the developed economy but also the developing economy. Going further, other works of literature have tried to measure the impact of COVID-19 on the global economy, most especially the stock market (Irawan & Alamsyah, 2021).

Due to the pandemic, there was a drastic decrease in the global growth of gross domestic product (GDP), likewise, the energy market was largely affected (Gómez & Yesufu, 2022). This is similar to the International Monetary Fund (IMF, 2020) claims that the world GDP may experience a negative graph trend in 2020 to a level worse than the 2008–2009 financial crisis. About a 24% reduction in the price of brent oil was recorded in just the first month (March 20, 2020) of the lockdown (Açikgöz & Günay, 2020).

The manufacturing industries were not left unaffected. This was evident from the British Plastic Federation survey record which shows that 98% of her survey respondents claimed severe impact on the manufacturing industry. It is no doubt that investment and business were seriously impacted by the COVID-19 crisis (Donthu & Gustafsson, 2020). Uncertainties emerged in economic policies during this period, meanwhile, the reduction in household spending was positively impacted (Baker, Bloom, et al., 2020). Similarly, Sharif et al. (2020) show that economic policy uncertainty, oil prices, geopolitical risk, and stock markets were seriously affected by the COVID-19 pandemic.

Specifically, the impact on stock market return has largely been investigated in recent years, following the pioneer documentation of Goodell (2020), researchers have examined the relationship between the COVID-19 pandemic and stock market return. The relationship was explored using a different framework. A good example is the Ashraf (2020) investigation on COVID-19 and the stock market using three models including the ordinary least squares (OLS) regression model, fixed, and random effects models. The findings of the study show a negative impact of COVID-19 on stock markets.

Using articles from the newspaper, Baker, Farrokhnia, et al. (2020) also found a reduction in stock market return as a result of the COVID-19 pandemic. Liu, Manzoor, et al. (2020) study was based on event study analysis. They also revealed that COVID-19 adversely affects the stock market return. Although, their findings were specific to developed countries and were also in contrast with other studies that found a positive impact on stock market volatility. Several other studies have explored country-specific impact. The panel data fixed effect model was adopted by Al-Awadhi et al. (2020) to examine the relationship between COVID-19 and Chinese stock market return. The findings of the study revealed both negative and positive impacts of the of COVID-19 on the Chinese stock market.

A negative impact was demonstrated on their stock market return while the study claimed a positive impact on China's medical and information technology sectors. An event study analysis method was also used by Ramelli and Wagner (2020) to examine the reaction of the USA. market to the COVID-19 pandemic in three different waves. The result of the analysis shows that the USA firms that have direct business with China experienced a negative abnormal return during the SARs-CoV-2 incubation period, likewise a negative impact on the stock market return during the disease outbreak phase. This impact increases the fear of both business analysts and investors on cooperating debt and the fear of liquidity.

Similar to Al-Awadhi et al. (2020) study, Hsu and Liao (2022) found that COVID-19 positively

affects stock price volatility and trading volume. The stock market return was negatively affected. A plethora of studies have examined this phenomenon in the context of other countries. Great uncertainty was faced by the world stock market during the COVID-19 infection as it was difficult to curb its spread.

The majority of authors affirm that the decline in stock market performance was due to an increase in confirmed COVID-19 cases while the death toll increases in all countries (Ashraf, 2020; Al-Awadhi et al. 2020). Larger numbers of the developed and emerging stock markets in Asia and Europe were mostly affected by the COVID-19 crisis (Beirne et al., 2021; Barua & Barua, 2021; Harjoto et al., 2021). Several works of literature also have explored the relationship between the COVID-19 pandemic and the GCC, the USA, MENA, and Asia countries' stock market returns.

GCC countries as the most oil-producing countries of the world experienced lots of turbulence in oil stock during this period. However, despite the large number of authors who have primarily examined the relationship between COVID-19 and stock market return, there seems to be little secondary research that has systematically summarised the findings on this relationship. Especially in the context of GCC countries, the USA, MENA countries, and some parts of Asia countries including China, Japan, India, and South Korea. Consequently, this paper offers insights on a very recent phenomenon, i.e., the impact of the COVID-19 pandemic on stock market returns of some selected countries, employing a systematic literature review approach.

3. METHODOLOGY

The appropriateness of choosing a specific research methodology and design was first considered. This raises a question as to the suitability and appropriateness of the systematic literature review approach to the study. However, understanding the purpose of this study is to combine data from existing empirical research on the coronavirus (COVID-19) impact on stock market return. Hence, the appropriateness of this research method. More so, several scholars have posited that this method is a significant one in terms of evidence synthesis that will aid decision-making and policy-making in real-time (Moher et al., 2007). As described in the systematic review glossary, systematic literature review is an evidence synthesis approach that generates broad or specific research questions and gathers information (data) that provides comprehensive answers to the formulated question (Petersen et al., 2015).

Similarly, the suitability iterates on the fact that this research method provides a thorough or comprehensive summary of the findings' current standing relative to the designed questions (Armstrong, 2011). Affirmatively, due to its uniqueness in qualitative and quantitative evidence synthesis and its ability to use systematic and transparent methods to reduce bias, solidify the reasons for considering this method over other methods (Ader, 2008; Moher et al., 2007).

Based on this background, this review utilized both quantitative and qualitative information from primary studies, following guidelines suggested by Petersen et al. (2015) in the gathering and synthesis

of information from high-quality scientific studies relevant to COVID-19 and stock market return among GGC, MENA, the USA, and Asia countries. Furthermore, the preferred reporting items for systematic reviews and meta-analyses (PRISMA) protocols are used to control how relevant studies were found during the search process, allowing us to create eligibility standards for research to be included and excluded during screening (Moher et al., 2009).

The methodology approach composes of in stages. The protocol development comes first in the study, then the inclusion and exclusion criteria, literature research for studies from the database, screening of the studies by two authors, including full-text, title, and abstract screening, data extraction, and finally a synthesis of the prior findings. The stages were presented in a flowchart in the figure below.

Figure 1. Flow diagram showing the research process
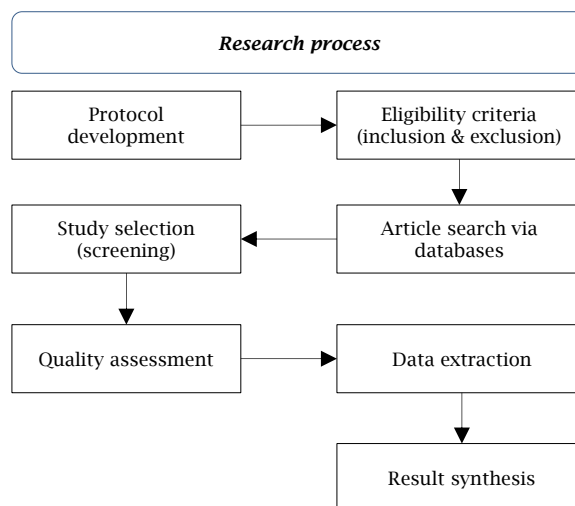
As the initial phase of the systematic review process, it stated the primary research question that formed the foundation for the article search and paper selection, the data sources and search terms, the inclusion and exclusion standards, and the results section (Higgins & Green, 2008).

3.1. Inclusion criteria

Relevant studies were included if they systematically explored and analyzed the impact of the COVID-19 pandemic on stock market returns within the USA, GCC, MENA, and Asia countries. Specifically, the review focused on peer-reviewed articles that addressed the post-COVID-19 era, encompassing the years 2020 to 2022, which witnessed a surge in interest regarding this research phenomenon. The language criterion mandated that only articles composed in the English language were eligible for inclusion. Therefore, studies included peer-reviewed journal articles, empirical studies, conference papers, and dissertations. The scope of eligible studies encompassed investigations that distinctly delved into the effects of the pandemic on stock market returns within the designated geographical regions of the USA, GCC, MENA, and Asian countries.

3.2. Exclusion criteria

Conversely, studies authored in languages other than English were excluded from consideration due to limitations in translation and accessibility. Dissertations, magazines, conference abstracts, notes, and letters were also omitted, as these forms of content might lack the rigor and comprehensive analysis required for this systematic review. Additionally, articles published before the year 2020 were disregarded, as the primary focus of the study was the post-COVID-19 period. This temporal boundary was set to ensure that the synthesis captured the specific impacts stemming from the pandemic's emergence and subsequent consequences on stock market returns.

3.3. Article search

In order to identify, suitable studies, the authors conducted a comprehensive search of Web of Science, Scopus, and Emerald Insight databases. The appropriateness of selecting this database is due to the specificity and diversity across research domains. Web of Science is considered a world-leading database for the search of scientific citations, and it is diversified across research fields including social science (Khalid et al., 2021). The database was queried using a developed search string within the title and abstract of the databases, while keywords were combined using boolean operators ("*and*" and "*or*").

The following keywords were used in the literature search: "COVID-19" *and* "stock market" *or* "capital market" *or* "stock market returns" *or* "market price" *or* "market performance".

3.4. Article selection

The article selection process adhered to PRISMA guidelines, ensuring transparency and rigor. Initial database searches were conducted across Web of Science, Scopus, and Emerald Insight, yielding a substantial pool of potential articles. Through a multi-step screening process, relevant studies addressing COVID-19's impact on stock markets in the USA, GCC, MENA, and Asia were identified.

Title and abstract scrutiny determined relevance, retaining articles aligned with the research scope. Full-text assessment followed, evaluating peer-reviewed status, publication years (2020–2022), and English language. Articles meeting these criteria and contributing substantial insights were selected. This systematic process, guided by the PRISMA flow diagram, culminated in a final collection of studies, ensuring the review's comprehensive exploration of COVID-19's stock market impact in the selected regions.

Table 1 below provides a comprehensive overview of the research paper screening process. Initially, a total of 3,263 papers were collected from three different sources: 1) 1,624 from Web of Science, 2) 937 from Scopus, and 3) 702 from Emerald Insight.

The screening process involved several steps. Firstly, duplicate records were removed, resulting in the elimination of 2,741 duplicates across all sources. Subsequently, papers were excluded based on abstract screening, with 487 papers being excluded for this reason.

Secondly, after this rigorous screening process, the final selected papers were determined. Ten papers from Web of Science, thirteen from Scopus, and twelve from Emerald Insight met the criteria and were included in the final selection. This selection process allowed for a focused analysis of a smaller, yet highly relevant, set of research papers for the study.

Overall, the screening process ensured that only 35 of the initially collected papers were considered suitable for inclusion in the research, facilitating a more manageable and targeted analysis of the research topics of interest.

Table 1. Screening and filtering of research papers

Source	Initial papers	Duplicate removal	Excluded from abstract screening	Final selected papers
Web of Science	1,624	-1,390	-224	10
Scopus	937	-721	-203	13
Emerald Insight	702	-630	-60	12

3.5. Quality assessment

The recommendation assessment, development, and evaluation assessments were used to assess the standard of the included studies grading of recommendations, assessment, development, and evaluations (GRADE) approach (Guyatt et al., 2008). This approach involves the formulation of ten quality assessment questions (Table 2) and a scoring system of 1–10. These guidelines are similar to the method described by Brereton et al. (2007). The formulated questions are targeted at evaluating the methodology of the included studies, whilst each question represented one point. The studies were remarks "very poor" if the total score is less than 5, "poor" if the total score is 5, "good" if the total score is between 6–7, "very good" if the total score is between 7–8 and "excellence" if the total is 9–10.

Table 2. Quality assessment (QA) questions

No.	QA question
Q-1	Is the research question pertinent to the topic of the review?
Q-2	Does the study employ a reliable method of sampling?
Q-3	What kind of research query is posed?
Q-4	Was the research question's design of the study appropriate?
Q-5	Does the study's methodology identify the main potential bias factor?
Q-6	Does the execution of the study follow established protocol?
Q-7	Was the study's stated hypothesis put to the test?
Q-8	Is there any data analysis used in the study?
Q-9	Was the conclusion drawn based on the information?
Q-10	Is there any conflict of interest mentioned in the study?

3.6. Data extraction

A data extraction form that suits the objectives of this research was used to extract the characteristics and variables of the included studies. The variables extracted include: 1) the first author information, 2) years of publication, 3) study settings, i.e.,

country/region, method used in evaluating COVID-19 impact, source of data used for the evaluation, market indices used for the evaluation, impact indicators, impact predictors, type of impact, i.e., positive/negative/both, most affected phase/country if applicable and 4) the main outcome of the research.

4. RESULTS

This section presents study selection results, quality assessment results, and finally the characteristics of the included studies.

4.1. Study selection and screening process

Electronic search results were used to find the studies for this review of the Web of Science, Scopus, and Emerald Insight. After the search, 3,263 reference citations were retrieved and exported into Excel software version 12.0. After title and abstract screening, a large volume of 3,228 non-relevant studies were excluded from the next stage of full-text screening. The strict inclusion criteria and our focus on particular regions have resulted in a significant number of papers being excluded. A full-text screening was performed on the remaining 35 eligible studies to be evaluated. All 35 studies met the inclusion criteria and were included in this study studies.

Figure 2. PRISMA flowchart showing the screening process
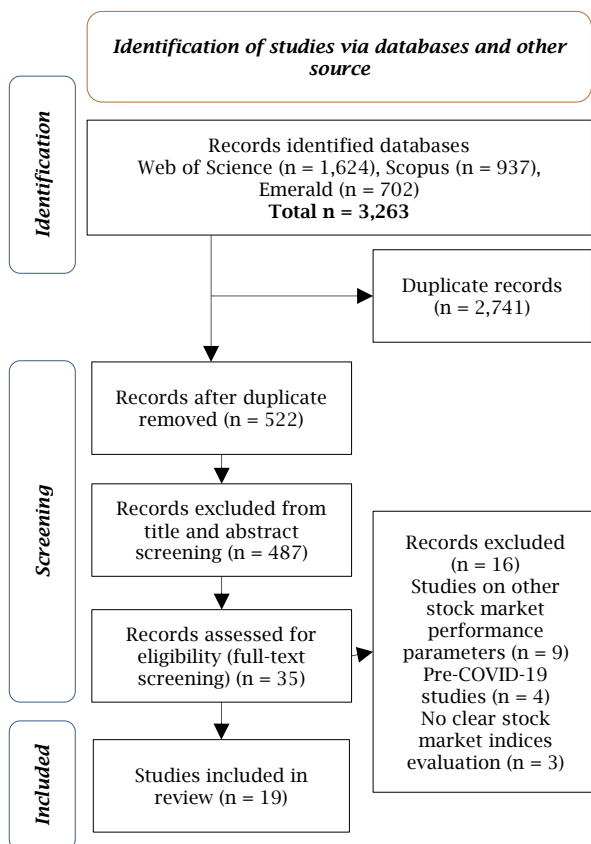
4.2. Quality assessment

All the 35 included studies were evaluated for quality using the GRADE approach, authors amended. Interestingly, all the studies were high-quality studies have used a standard empirical protocol that allows the evaluation of the COVID-19 impact on stock market return. Ten studies had 8 quality scores, which is remarked as very good. However, they fail to report any source of bias and conflict of interest among authors in their studies. Nine studies were graded excellent haven scored between 9 (eight studies) and 10 (one study). However, 16 studies have scored less than 5 and thus have been excluded.

4.3. Characteristics of included studies

In this review, a total of 19 studies that empirically discussed the impact of the coronavirus pandemic (COVID-19) on the GCC, the USA, and Asia were included in the final synthesis analysis following quality assessment. As aimed by this review to also includes all MENA countries and Asia countries, unfortunately for Asia, only China, Japan, Korean, and Indian studies on this phenomenon were found while only studies in GCC also part of MENA were retrieved. All other countries proposed by this study that were not included in the final synthesis have only been empirically researched alongside other countries. Hence, they have not been separately investigated.

Going further, evidence from the synthesis shows that research on the COVID-19 impact on the stock market is most popular in 2020 when the pandemic was most aggravated while the popularity drops as the year passes-bye. However, of the reviewed regions, Asia is the most researched region with nine articles, followed by GCC countries, while only four USA studies met the inclusion criteria. Among the Asia countries, China seems to be the most researched Asian country on an individual level, followed by Japan. On the other hand, among GCC countries, Saudi Arabia is the most researched on an individual level.

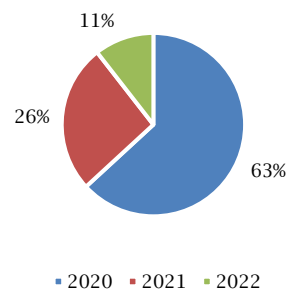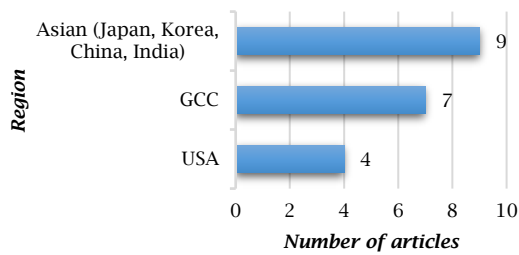**Figure 3.** Distribution of articles by year of publication

Figure 4. Distribution of articles by region

A different reliable source was adopted by the authors to obtain daily information (data) on the stock market's performance over COVID-19. The data collected includes: news, confirmed cases and deaths due to COVID-19, and specific stock market indices. The most popular data sources include Refinitiv Reuters datastream, Thomson Reuters, Wind database, Worldmeters, and other specific COVID-19 and stock market-specific websites. For all three regions, 11 stock market indexes were explored by the authors (Table 2).

Table 2. Stock market index explored by the included studies

No.	Country	Stock market index	Source
1	Saudi Arabia (KSA)	Tadawul All Share Index (TASI)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
2	The UAE (Dubai & Abu Dhabi)	Dubai Financial Market General Index (DFMGI)/Abu Dhabi Securities Market General Index (ADSMI)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
3	Kuwait	Kuwait Stock Exchange Index (KWSEAS)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
4	Qatar	Qatar Exchange Index (also known as DSM20 Index)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
5	Oman	Muscat Securities Index (MSM30)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
6	Bahrain	Bahrain Bourse All Share Index (BHSEASI)	Abuzayed and Al-Fayoumi (2021), Alzyadat and Asfoura (2021), Bahrini and Filfilan (2020), Alber and Saleh (2020)
7	China	Chinese Shanghai Shenzhen CSI 300 Index (CSI300)/Shanghai and Shenzhen Composite Index	Gil-Alana and Claudio-Quiroga (2020), He and Harris (2020), Prabheesh et al. (2020), Ngwakwe (2020), Al-Awadhi et al. (2020), Apergis and Apergis (2020)
8	Japan	Nikkei Stock Average (Nikkei 225)/Japan ETF Index	Gil-Alana and Claudio-Quiroga (2020), He and Harris (2020), Prabheesh et al. (2020), Narayan (2020)
9	Korea	Korean Securities Dealers Automated Quotations (KOSDAQ)/Korea Composite Stock Price Index (KOSPI)	Gil-Alana and Claudio-Quiroga (2020), He and Harris (2020), Liu, Manzoor, et al. (2020), Prabheesh et al. (2020)
10	India	NIFTY50	Gil-Alana and Claudio-Quiroga (2020), He and Harris (2020), Liu, Manzoor, et al. (2020), Prabheesh et al. (2020)
11	The USA	Dow Jones Industrial Average (DJIA)/S&P 500/S&P 1500	Lee (2020), Mazur et al. (2021), Ngwakwe (2020)

In evaluating the impacts of COVID-19 on these stock market indices, several authors utilize different methods. However, the event study method, panel data regression model, and paired sample t-test were the most frequently used methods. Other notable methods include: 1) the dynamic conditional correlation generalized autoregressive heteroscedasticity (DCCGARCH) model, 2) the generalized autoregressive conditional heteroscedasticity (GARCH) model, and 3) the autoregressive conditional heteroscedasticity (ARCH) models. These three notable methods are similar models with little differences. The suitability of all the models is based on their ability to evaluate the relationship between the stock market indices and COVID-19 in a clear path. All the 16-evaluation model used by the authors is presented in the figure below.

Figure 5. Distribution of articles by region
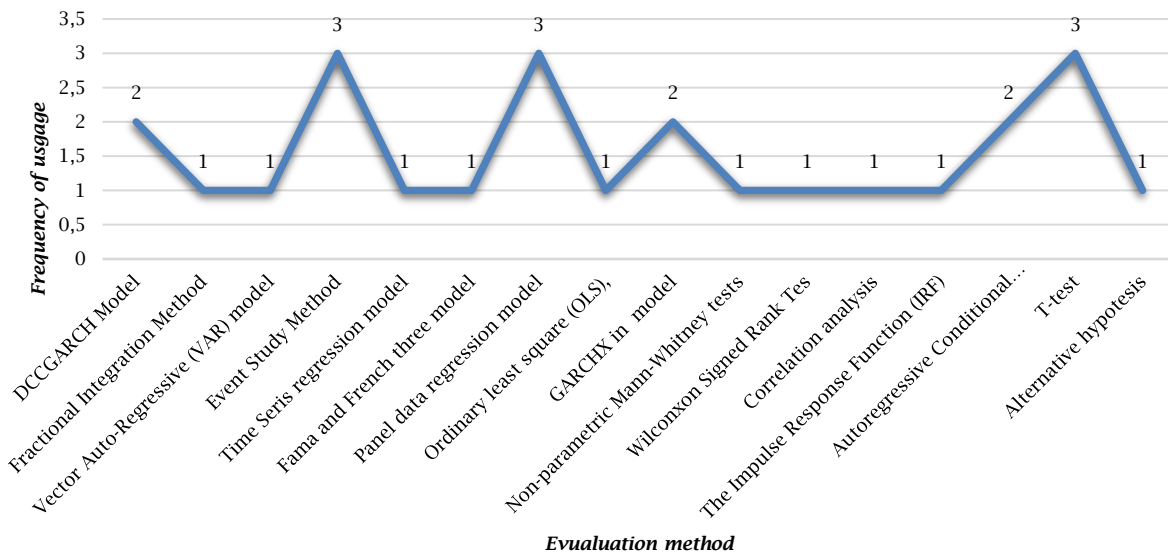
4.4. Impact on stock market return

Using these evaluation methods, the impact of COVID-19 on stock market indices was examined and reported. Exactly 74% of the included studies reported a negative impact of COVID-19 on the stock market while only 5% reported a positive outcome. However, 21% argued that COVID-19 had both positive and negative impacts on the stock market. Apart from the stock market return, other indicators of stock return reported include: 1) oil systemic risk spillover, 2) abnormal return, 3) cumulative abnormal return firm-specific information, 4) income and wealth inequalities, 5) stock market value, 6) currency depreciation, and 7) stock market price volatility and sensitivity.

Evidence from these tables shows that 15.38 corresponding to two studies found a positive effect of COVID-19 on stock market return while 7.69% corresponding to a single article claim that the effects on the stock market return are both positive and negative. The only article that reported stock market return in terms of currency pair, reported an increase in yen (JPY) against the United States dollar (USD)as the positive impact of COVID-19.

In addition, of the two studies that demonstrated stock market value, one of the studies found both positive and negative impacts on stock market value. On stock market price volatility and sensitivity, 83.33% (five of six) reported a negative impact while 16.67% corresponding to only a single author, reported both positive and negative impact. All other impact indicators, most importantly, abnormal and cumulative abnormal stock market returns were all supported by the authors to have been negatively affected by the pandemic.

To conclude, the impact indicates that the majority of the observations fall into the negative category, with a notable proportion exhibiting both positive and negative attributes. A smaller percentage is attributed to observations classified as positive. This distribution provides insights into the diverse nature of the dataset and the prevalence of different characteristics among the observations presented in Figure 6 below.

Figure 6. Distribution of impacts
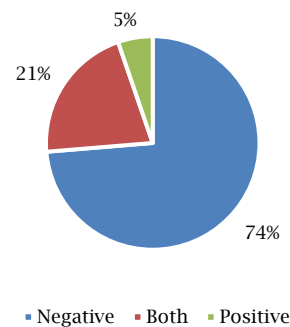
Table 3. COVID-19 stock market impact indicators

Impact Indicator	Frequency	% Positive	% Negative	% Both
Stock return	13	15.38	76.92	7.69
Oil systemic risk spillover	1	-	100	-
Abnormal return (AR) and cumulative abnormal return (CAR)	3	-	100	-
Firm-specific information	1	-	100	-
Income & wealth inequality	1	-	100	-
Stock market value	2	-	50	50
Currency depreciation (JPY-USD)	1	100	-	-
Stock market price volatility/sensitivity	6	-	83.33	16.67

The Results section showcases a meticulous study selection process, utilizing electronic searches across prominent databases. Among 3,263 references, 2,741 duplicates were removed, resulting in 35 eligible studies. All met inclusion criteria, underscoring their relevance. Quality assessment, following the GRADE approach, revealed 35 high-quality studies, with ten rated very good and nine excellent. Notably, 16 lower-quality studies were excluded. The included 19 studies empirically examined COVID-19's impact on the GCC, the USA, and Asia. While Asia and GCC nations dominated research, specific countries like China and Japan garnered significant attention. Data from reliable sources, including Refinitiv Reuters, Thomson Reuters, and specialized COVID-19 and stock market websites, informed the analysis of 11 distinct stock market indices across the regions. Methodologically, various models were employed, including event studies and regression models. Findings indicated a predominantly negative impact (74%) on stock market indices, with some studies (21%) reporting mixed effects. Additionally, indicators beyond market return were explored, providing a comprehensive understanding of COVID-19's repercussions on financial markets.

5. DISCUSSION

5.1. GCC countries

To begin with, GCC, Saudi Arabia, United Arab Emirates (UAE), Kuwait, Qatar, Bahrain, and Oman, which are regarded as the most oil-producing countries were seriously affected by the lockdown. Out of the seven studies included in this review that discuss the impact of COVID-19 on the GCC stock market return, revealed a negative impact, except for Bahrini and Filfilan (2020) who found both negative and positive impacts.

Using panel data analysis, they examined the impact of novel coronavirus on the GCC stock market. Although, the study only considered a short period spanning from April 1 to June 26, 2020. Compared to other scholars, they argued that only the rise in confirmed cases of COVID-19 death significantly affects the stock market daily returns of GCC countries while it may not be significant with only confirmed cases. Similar to Alber and Saleh (2020) who also supported that GCC countries' stock market returns were most sensitive to new cases of COVID-19 death using the Wilcoxon signed-rank test and alternative hypothesis.

Despite the difference in the stock market indices considered, they found a similar result. Although, both studies consider the effect during the April wave of the pandemic. Bahrini and Filfilan (2020) later concluded that the major stock market indices in GCC experienced a decline in their daily return as the confirmed deaths due to COVID-19 increased while their further analysis shows a positive impact on GCC oil price volatility. This is in contrast with a recent correlation study by Abuzayed and Al-Fayoumi (2021) who show explores a positive association between COVID-19 confirmed cases and negative GCC stock market return.

As to whether which of the GCC countries is most affected, Abuzayed and Al-Fayoumi's (2021) empirical study using dynamic conditional correlation generalized autoregressive heteroscedastic finds a negative effect of the novel virus on GCC oil systemic risk spillover. However, Saudi Arabia among others was most impacted in the first wave of the pandemic meanwhile, the effects have become more significant in the United Arab Emirates in the second wave. Nevertheless, all of the GCC countries were vulnerable to oil systemic risk spillover during the second phase of COVID-19. The finding is in line with Alzyadat and Asfoura (2021) who also found Saudi Arabia as the most sensitive to COVID-19 impact. However, it was later added that the sensitivity may vary depending on the wave of the lockdown.

5.2. Relationships with other regions

Going further, a few studies also have explored the impact relationship of COVID-19 on the stock market return of GCC countries and Asia. The majority of the reports show a negative impact. And the impact on GCC countries was minimal when compared with the general world stock market. The analysis of the daily foreign stock market data confirmed an association between Chinese stock market movement and GCC countries' oil spillover effects. In a short time, the study argued that the domestic stock market return of GCC countries was not significantly affected, whilst the Chinese domestic stock market was negatively impacted.

However, other studies that have singly investigated the COVID-19 impact on Asia countries found a negative impact on Asia countries. For instance, Prabheesh et al. (2020) examined the reactions to the COVID-19 pandemic on the stock market nexus of oil exporting countries in Asia (China, India, Japan, and Korea).

Using the DCCGARCH model, the study indicates a positive correlation between oil prices and stock price return during the pandemic most especially during the early wave of the virus (march). This shows that as the oil price fell, the stock market return of the four Asia countries was negatively affected. This is consistent with He and Harris's (2020) event study analysis. The result of He and Harris (2020) indicates that Chinese stock market value and cumulative abnormal return experienced strong negative effects.

However, the negative impact was found to be more severe in the mining, transportation, environmental, electricity, and heating industries across the three Asia countries. These findings are like recent empirical research findings that identified a strong decline in the Chinese and Asia stock markets during this period (Liu, Manzoor, et al., 2020). This decline resulted in a negative cumulative abnormal return during the pandemic. As confirmed by Liu, Manzoor, et al. (2020), not all the sectors were negatively affected, pharmaceutical, manufacturing, software, and information technology witnessed positive impact in terms of cumulative abnormal return.

Meanwhile, the transportation, lodging, and catering industries were negatively affected. This is in line with the USA study conducted by Mazur et al. (2021). The study found a negative impact of COVID-19 on petroleum, real estate, entertainment, and the hospitality industry, whereas positive high

returns were witnessed in natural gas, food, health, and software stock markets in the USA.

The effects on these sectors of the economy correspond to the social restrictions imposed by the government to curb the spread of the disease. At some point during the lockdown. movement and several other social activities were completely restricted, hence, reasons why these sectors of the economy may have experienced negative cumulative abnormal returns (Yesufu & Alajlani, 2019). Although Al-Awadhi et al. (2020) panel data analysis of daily Chinese stock market data shows that all Chinese companies were negatively affected during this period. The negative effects on the stock market return corresponded to the total confirmed cases and total confirmed deaths of COVID-19.

5.3. The Asian stock market

In addition, Gil-Alana and Claudio-Quiroga's (2020) evaluation of the COVID-19 impact on Asia stock market indices shows that the Japanese stock market was significantly affected when compared to the impact on Chinese and Korean stock market returns. Meanwhile, Narayan's (2020) GARCH-X model analysis of daily time series data found a positive impact of COVID-19 on Chinese currency against USD. The study argued that a single standard deviation depreciation of yen can result in a 71% increase in average stock market return. Another novel contribution in the Chinese context was made by Liu, Manzoor, et al. (2020).

In one of the included studies, Lee's (2020) sentiment analysis of 11 USA stock market indices identified a fall in stock market return. These findings are in agreement with Mazur et al. (2021) who also revealed that the USA stock market experienced a negative downturn during the COVID-19 period. It was further described that the negative high asymmetrical volatility correlation with stock market return was a result of lost stock. The COVID-19 crisis greatly led to USA stock market inefficiency, as most investors decision were scared by the viral disease. Several stocks were lost while in a rush to sell off stock cheaply as a way to prevent liquidity. This, however, creates profitable opportunists for both the traders and speculators.

5.4. Consequences of the pandemic

The outbreak of the COVID-19 pandemic in early 2020 had far-reaching consequences across various sectors, with the global financial markets being particularly susceptible to its effects. The COVID-19 pandemic introduced an unprecedented level of uncertainty into the financial markets, causing a significant shift in investor behavior. Studies have shown that investors' risk appetite diminished as uncertainty increased, leading to heightened market volatility. The pandemic induced a flight to safety, causing investors to flock to less risky assets, such as government bonds while abandoning riskier investments like stocks. The relationship between market volatility and the impact of COVID-19 was striking. Volatility indices, such as the Chicago Board Options Exchange's volatility index (VIX), experienced significant spikes during the early stages of the pandemic. The fear of the unknown, coupled with sudden global lockdowns and economic uncertainty, led to a surge in volatility (Sharif et al., 2020).

The pandemic-induced uncertainty disrupted investor behavior, triggered market volatility, and influenced stock returns across various sectors. Government interventions played a vital role in mitigating immediate market shocks, but the long-term effects remained uncertain. The varying impact on different sectors highlighted the importance of adaptability and sectoral resilience. As the world continues to grapple with the pandemic's aftermath, the insights gained from this literature analysis can serve as a valuable foundation for understanding the evolving dynamics of the financial markets in times of crisis.

6. CONCLUSION

While this research contributes significantly to the understanding of the impact of COVID-19 on stock market returns, it's important to acknowledge certain limitations. The generalizability of findings may be constrained due to the specific focus on GCC countries, the USA, and select Asian nations (China, Japan, Korea, and India). The exclusion of other global regions may limit the broader applicability of the study's conclusions.

As the inaugural systematic review within this research context, it lays the groundwork for future investigations. A potential avenue for further research involves conducting an extensive review encompassing a larger volume of studies that examine the influence of COVID-19 on global stock market returns, utilizing comprehensive global stock market indices. Moreover, there's a need for a more comprehensive exploration of this phenomenon within individual countries to capture a comprehensive perspective of COVID-19's impact on stock market returns. Such endeavors can yield deeper insights into the complex interplay between pandemic dynamics and financial markets.

This systematic literature review provides a comprehensive understanding of the impact of COVID-19 on stock market returns in GCC, the USA, and Asia countries (China, Japan, India, and South Korea). By analyzing a range of empirical studies, this research contributes valuable insights into the complex relationship between the pandemic and stock market reactions during this unprecedented period. The synthesis analysis highlights the stock market's sensitivity to the COVID-19 crisis across the selected countries. News headlines regarding confirmed cases and deaths emerged as crucial factors influencing investor sentiment and subsequently affecting stock market returns. While some studies reveal both positive and negative impacts on specific segments of stock markets and price volatility, the majority (70%) underscore the pandemic's predominantly negative impact.

The review delves into the unique circumstances of various regions. In the GCC countries, particularly oil-producing nations like Saudi Arabia, the lockdowns and pandemic-related uncertainties severely impacted stock market returns. The USA, China, and Asia countries also experienced negative effects, with market volatility and stock returns showing an inverse correlation. The extent of impact varied among different sectors,

reflecting the influence of government-imposed restrictions on social and economic activities. Market volatility surged in response to the pandemic, prompting investors to seek safer assets and impacting stock returns across sectors.

Government interventions alleviated initial market shocks, yet the long-term ramifications remained uncertain. As the world navigates the aftermath of the pandemic, the insights derived from this review offer a valuable foundation for understanding financial market dynamics during times of crisis. The evolving landscape underscores the importance of sectoral adaptability and resilience in ensuring sustained economic recovery.

REFERENCES

Abuzayed, B., & Al-Fayoumi, N. (2021). Risk spillover from crude oil prices to GCC stock market returns: New evidence during the COVID-19 outbreak. *The North American Journal of Economics and Finance, 58*, Article 101476. https://doi.org/10.1016/j.najef.2021.101476

Açikgöz, Ö., & Günay, A. (2020). The early impact of the COVID-19 pandemic on the global and Turkish economy. *Turkish Journal of Medical Sciences, 50*(9), 520–526. https://doi.org/10.3906/sag-2004-6

Ader, H. J. (2008). Phases and initial steps in data analysis. In *Advising on research methods: A consultant's companion* (pp. 333–356). Johannes van Kessel Publishing. https://cutt.ly/qwVWOJmg

Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammadi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. *Journal of Behavioral and Experimental Finance, 27*, Article 100326. https://doi.org/10.1016/j.jbef.2020.100326

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), 16–24. https://doi.org/10.5539/ibr.v13n11p16

Alzyadat, J. A., & Asfoura, E. (2021). The effect of COVID-19 pandemic on stock market: An empirical study in Saudi Arabia. *The Journal of Asian Finance, Economics and Business, 8*(5), 913–921. https://doi.org/10.13106/jafeb.2021.vol8.no5.0913

Apergis, E., & Apergis, N. (2020). Can the COVID-19 pandemic and oil prices drive the US Partisan Conflict Index? *Energy RESEARCH LETTERS, 1*(1). https://doi.org/10.46557/001c.13144

Armstrong, M. (2011). *Armstrong's handbook of strategic human resource management* (5th ed.). Kogan Page.

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance, 54*, Article 101249. https://doi.org/10.1016/j.ribaf.2020.101249

Assous, H. F. (2022). Saudi green banks and stock return volatility: GLE algorithm and neural network models. *Economies, 10*(10), Article 242. https://doi.org/10.3390/economies10100242

Bahrini, R., & Filfilan, A. (2020). Impact of the novel coronavirus on stock market returns: Evidence from GCC countries. *Quantitative Finance and Economics, 4*(4), 640–652. https://doi.org/10.3934/QFE.2020029

Baker, S. R., Bloom, N., Davis, S. J., Kost, K., Sammon, M., & Viratyosin, T. (2020). The unprecedented stock market reaction to COVID-19. *The Review of Asset Pricing Studies, 10*(4), 742–758. https://doi.org/10.1093/rapstu/raaa008

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. https://doi.org/10.1093/rapstu/raaa009

Barakat, H. A., El-Zayat, A. M., Mohamed, H. E., El-Naggar, I. K., Mohamed, N. A., & Mounir, N. H. (2022). The impact of COVID-19 spread on Egyptian stock market return [Special issue]. *Corporate Governance and Organizational Behavior Review, 6*(4), 338–348. https://doi.org/10.22495/cgobrv6i4sip14

Barua, B., & Barua, S. (2021). COVID-19 implications for banks: Evidence from an emerging economy. *SN Business & Economics, 1*, Article 19. https://doi.org/10.1007/s43546-020-00013-w

Beirne, J., Renzhi, N., Sugandi, E., & Volz, U. (2021). COVID-19, asset markets and capital flows. *Pacific Economic Review, 26*(4, special issue), 498–538. https://doi.org/10.1111/1468-0106.12368

Brereton, P., Kitchenham, B. A., Budgen, D., Turner, M., & Khalil, M. (2007). Lessons from applying the systematic literature review process within the software engineering domain. *Journal of Systems and Software, 80*(4), 571–583. https://doi.org/10.1016/j.jss.2006.07.009

Demir, E., & Danisman, G. O. (2021). Banking sector reactions to COVID-19: The role of bank-specific factors and government policy responses. *Research in International Business and Finance, 58*, Article 101508. https://doi.org/10.1016/j.ribaf.2021.101508

Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. *Journal of Business Research, 117*, 284–289. https://doi.org/10.1016/j.jbusres.2020.06.008

Gil-Alana, L. A., & Claudio-Quiroga, G. (2020). The COVID-19 impact on the Asian stock markets. *Asian Economics Letters, 1*(2). https://doi.org/10.46557/001c.17656

Gómez, J. M., & Yesufu, L. O. (Eds.). (2022). *Sustainable development through data analytics and innovation: Techniques, processes, models, tools, and practices.* Springer Nature.

Goodell, J. W. (2020). COVID-19 and finance: Agendas for future research. *Finance Research Letters, 35*, Article 101512. https://doi.org/10.1016/j.frl.2020.101512

Gormsen, N. J., & Koijen, R. S. (2020). Coronavirus: Impact on stock prices and growth expectations. *The Review of Asset Pricing Studies, 10*(4), 574–597. https://doi.org/10.1093/rapstu/raaa013

Guyatt, G. H., Oxman, A. D., Vist, G. E., Kunz, R., Falck-Ytter, Y., Alonso-Coello, P., & Schünemann, H. J. (2008). GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. *BMJ, 336*(7650), 924–926. https://doi.org/10.1136/bmj.39489.470347.AD

Hamal, J., & Gautam, R. R. (2021). Capital market response to COVID-19 pandemic — A systematic review on stock volatility and performance. *Marsyangdi Journal, 2*(1), 27–49. https://doi.org/10.3126/mj.v2i1.39963

Harjoto, M. A., Rossi, F., Lee, R., & Sergi, B. S. (2021). How do equity markets react to COVID-19? Evidence from emerging and developed countries. *Journal of Economics and Business, 115*, Article 105966. https://doi.org/10.1016/j.jeconbus.2020.105966

He, H., & Harris, L. (2020). The impact of COVID-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research, 116*, 176–182. https://doi.org/10.1016/j.jbusres.2020.05.030

Higgins, J. P. T., & Green, S. (Eds.) (2008). *Cochrane handbook for systematic reviews of interventions.* John Wiley & Sons. https://doi.org/10.1002/9780470712184

Higgins, J. P., & Altman, D. G. (2008). Assessing risk of bias in included studies. In J. P. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions: Cochrane book series* (pp. 187–241). John Wiley & Sons. https://doi.org/10.1002/9780470712184.ch8

Hsu, Y.-L., & Liao, L.-K. (2022). Corporate governance and stock performance: The case of COVID-19 crisis. *Journal of Accounting and Public Policy, 41*(4), Article 106920. https://doi.org/10.1016/j.jaccpubpol.2021.106920

International Monetary Fund. (2020). *IMF annual report 2020: A year like no other.* https://www.imf.org/external/pubs/ft/ar/2020/eng/downloads/imf-annual-report-2020.pdf

Irawan, A., & Alamsyah, H. (2021). The COVID-19's economic crisis and its solutions: A literature review. *Etikonomi, 20*(1), 77–92. https://doi.org/10.15408/etk.v20i1.16870

Kamal, B., Utami, E. U. S., & Zamami, N. (2021). Faktor-faktor yang mempengaruhi keputusan penggunaan ojek online di Kota Tegal pada masa pandemi COVID 19 [Factors influencing the decision to use online motorcycle taxis in Tegal City during the COVID 19 pandemic]. *Jurnal Akuntansi Indonesia, 10*(2), 111–128. https://doi.org/10.30659/jai.10.2.111-128

Khalid, N., Zafar, R. F., Syed, Q. R., Bhowmik, R., & Jamil, M. (2021). The heterogeneous effects of COVID-19 outbreak on stock market returns and volatility: Evidence from panel quantile regression model. *Etikonomi, 20*(2), 225–238. https://doi.org/10.15408/etk.v20i2.20587

Lee, H. S. (2020). Exploring the initial impact of COVID-19 sentiment on US stock market using big data. *Sustainability, 12*(16), Article 6648. https://doi.org/10.3390/su12166648

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), Article 2800. https://doi.org/10.3390/ijerph17082800

Mazur, M., Dang, M., & Vega, M. (2021). COVID-19 and the March 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters, 38*, Article 101690. https://doi.org/10.1016/j.frl.2020.101690

Moher, D., Tetzlaff, J., Tricco, A. C., Sampson, M., & Altman, D. G. (2007). Epidemiology and reporting characteristics of systematic reviews. *PLoS Medicine, 4*(3), Article e78. https://doi.org/10.1371/journal.pmed.0040078

Narayan, P. K. (2020). Has COVID-19 changed exchange rate resistance to shocks? *Asian Economics Letters, 1*(1). https://doi.org/10.46557/001c.17389

Ngwakwe, C. C. (2020). Effect of COVID-19 pandemic on global stock market values: A differential analysis. *Acta Universitatis Danubius. ŒCONOMICA, 16*(2), 255–269. https://journals.univ-danubius.ro/index.php/oeconomica/article/view/6548

Oudat, M. S. (2022). The COVID-19 pandemic and the performance of the stock exchange market: Evidence from the Bahrain Stock Exchange indexes. *Corporate & Business Strategy Review, 3*(1), 19–28. https://doi.org/10.22495/cbsrv3i1art2

Petersen, K., Vakkalanka, S., & Kuzniarz, L. (2015). Guidelines for conducting systematic mapping studies in software engineering: An update. *Information and Software Technology, 64*, 1–18. https://doi.org/10.1016/j.infsof.2015.03.007

Phan, D. H. B., & Narayan, P. K. (2020). Country responses and the reaction of the stock market to COVID-19 — A preliminary exposition. *Emerging Markets Finance and Trade, 56*(10, special issue), 2138–2150. https://doi.org/10.1080/1540496X.2020.1784719

Prabheesh, K. P., Padhan, R., & Garg, B. (2020). COVID-19 and the oil price — Stock market nexus: Evidence from net oil-importing countries. *Energy RESEARCH LETTERS, 1*(2). https://doi.org/10.46557/001c.13745

Rakshit, B., & Neog, Y. (2022). Effects of the COVID-19 pandemic on stock market returns and volatilities: Evidence from selected emerging economies. *Studies in Economics and Finance, 39*(4), 549–571. https://doi.org/10.1108/SEF-09-2020-0389

Ramelli, S., & Wagner, A. F. (2020). Feverish stock price reactions to COVID-19. *The Review of Corporate Finance Studies, 9*(3), 622–655. https://doi.org/10.1093/rcfs/cfaa012

Sharif, A., Aloui, C., & Yarovaya, L. (2020). COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence from the wavelet-based approach. *International Review of Financial Analysis, 70*, Article 101496. https://doi.org/10.1016/j.irfa.2020.101496

Ullah, S. (2023). Impact of COVID-19 pandemic on financial markets: A global perspective. *Journal of the Knowledge Economy, 14*, 982–1003. https://doi.org/10.1007/s13132-022-00970-7

Yesufu, L., & Alajlani, S. (2019). Measuring social innovation for education and resource development in refugee camps: A conceptual study. *International Journal of Higher Education, 8*(4), 208–220. https://doi.org/10.5430/ijhe.v8n4p208

APPENDIX

Table A.1. References

References	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Overall score	Remarks	Country
Abuzayed and Al-Fayoumi (2021)	1	1	1	1	0	1	1	1	1	0	8	Very good	GCC
Gil-Alana and Claudio-Quiroga (2020)	1	1	1	1	0	1	1	1	1	0	8	Very good	Asian (Japan, Korea, China)
Mazur et al. (2021)	1	1	1	1	0	1	1	1	1	0	8	Very good	The USA
Ngwakwe (2020)	1	1	1	1	0	1	1	1	1	0	8	Very good	The USA, China
Prabheesh et al. (2020)	1	1	1	1	0	1	1	1	1	0	8	Very good	Asian economies (China, India, Japan, Korea)
Alber and Saleh (2020)	1	1	1	1	0	1	1	1	1	0	8	Very good	GCC
Lee (2020)	1	1	1	1	0	1	1	1	1	1	9	Excellent	The USA
Liu, Manzoor, et al. (2020)	1	1	1	1	0	1	1	1	1	1	9	Excellent	China & Asia
Narayan et al. (2020)	1	1	1	1	1	1	1	1	1	0	9	Excellent	Japan
Al-Awadhi et al. (2020)	1	1	1	1	1	1	1	1	1	0	9	Excellent	China
Apergis and Apergis (2020)	1	1	1	1	0	1	1	1	1	1	9	Excellent	China
Bahrini and Filfilan (2020)	1	1	1	1	1	1	1	1	1	1	10	Excellent	GCC