

Research Paper

Unmasking the Effect of News Media on the Islamic Stock Market: Are ASEAN-3 Countries Vulnerable to COVID-19 News?

Syarifa Rahmi ^{a,1}, Nur Fatwa ^{b,2}, Agung Maulana ^{c,3*}

^a Master of Middle East and Islamic Studies, The University of Indonesia

^b School of Strategic and Global Studies, The University of Indonesia

^c Management Department, Faculty of Business and Humanities, Nusa Putra University

¹ rifha.selah08@gmail.com, ² nurfatwa@ui.ac.id, ³ agung.maulana@nusaputra.ac.id

*Corresponding author

ARTICLE INFO

Keywords:

Contagion Index; Fake News Index; Media Hype Index; News Sentiment; Panic Emotion Index; Sharia Stock Index; Sentiment Index

Article history:

Received: 23 January 2022
Revised: 11 November 2022
Accepted: 21 March 2023
Available online: 04 April 2023

To cite in APA style

Rahmi, S., Fatwa, N., & Maulana, A. (2023). Unmasking the Effect of News Media on the Islamic Stock Market: Are ASEAN-3 Countries Vulnerable to COVID-19 News? *Shirkah: Journal of Economics and Business*, 8(1) 78-94

ABSTRACT

This study provides a novel viewpoint by clarifying the effect of the COVID-19 news on the fluctuations of the Islamic capital market in the ASEAN Region. It aims to explore the effect of news related to the COVID-19 pandemic on the movement of the Islamic stock index in ASEAN-3 countries (Indonesia, Malaysia, Thailand). This research examined five news-related indices: panic emotion index, media hype index, sentiment index, fake news index, and contagion index. To test the hypothesis, the research employed long-term daily secondary data covering one year during the COVID-19 pandemic. A total of 1086 data were analyzed using the panel regression method through EVIEWS 9. The findings indicated that news media and the resulting sentiment have the potential to negatively affect the Islamic stock index movement through the panic and media hype index. The excitement and panic caused by the online news media negatively affected the movement of Islamic stock prices in the three ASEAN Islamic stock indexes. In contrast, fake news and contagion index were found to have no significant effect on the stock index movement.

This is an open access article under [CC-BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license.



Introduction

Efforts to stem the spread of the pandemic, including quarantines and mobility restrictions (lockdown), have slowed the global economy. Mass production declines

caused by disrupted global supply chains and declining aggregate demand continue to hamper investment and cause a gradual loss of profit and consumer confidence (Salisu & Vo, 2020). Aggregate stock prices have been at record lows, and commodity prices have fallen sharply due to the COVID-19 pandemic (OECD, 2020). The capital market is one of the sectors disrupted by the COVID-19 pandemic. It made stock markets worldwide suffer heavy losses in the first three months of 2020. The Bloomberg report said that global stock market volatility was disrupted mainly due to the spread of this virus. The developments of Several Global Shariah Stock Indices are illustrated in Figure 1 (SEVIE, 2021). For example, on March 18, 2020, during the initial stages of the COVID-19 outbreak, the S&P 500 Shariah index declined by 27%, Japan's Nikkei plummeted by 29%, and Germany's DAX dropped by 38% (Cepoi, 2020).

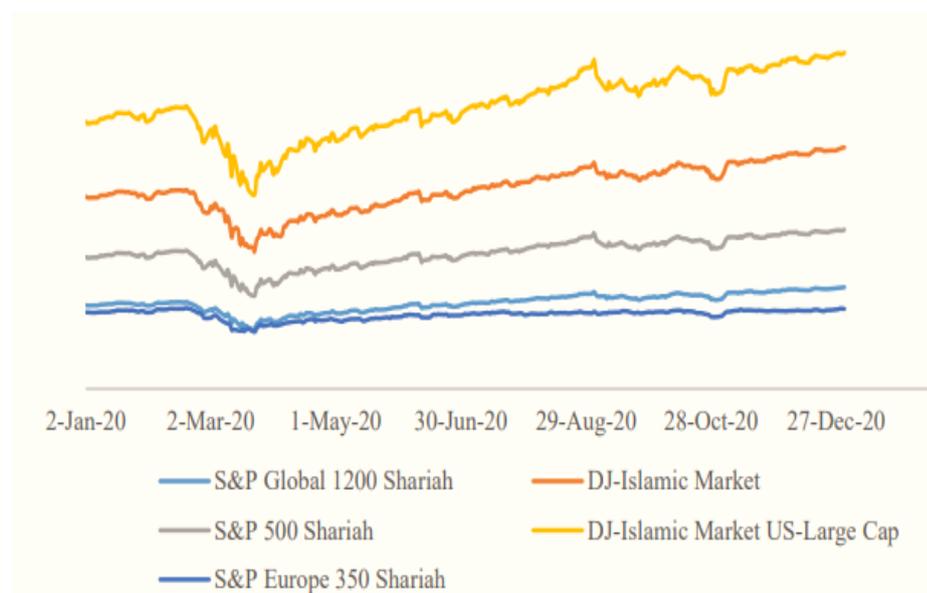


Figure 1. Developments of Several Global Shariah Stock Indices

The factors that influence the price movement of the joint stock can be categorized into two major groups: internal and external. The proportion of debt, dividends, and company profitability are internal factors that significantly affect return volatility and stock prices. Meanwhile, macroeconomic policies, social conditions, public information, and political conditions of a country are external elements that affect the stock market (Purwaningsih & Sulistiyani, 2020). The COVID-19 pandemic, with its various consequences, has emerged as an external factor that has caused investors anxiety to investors about the future of the business world, particularly with the companies they have invested in. It has resulted in an abnormal market response and has affected the stock prices' volatility, ultimately influencing the overall market performance.

The reason behind this study is the need to address a research gap in understanding the resilience of the Islamic stock market during the global financial crisis. The fundamental distinction between the structure of Islamic stocks and that of the conventional stock market lies in their principles. Sharia-based equity portfolios are founded on tangible economic activities, resulting in comparatively less risky stocks (Raza et al., 2016), more stable and shielded from volatility (Erdoğan et al., 2020; Paltrinieri et al., 2019). Previous studies have examined the impact of COVID-19 on the performance and movement of conventional capital markets in various business sectors worldwide,

including Indonesia (Dilla et al., 2020; Haroon & Rizvi, 2020; Sadiq et al., 2021). However, few studies have attempted to observe the response of the Islamic stock market to the COVID-19 pandemic (Ashraf et al., 2016). This research offers a new perspective by elucidating the issue of how the COVID-19 pandemic affects the movement and turmoil of the Islamic capital market worldwide, especially in the ASEAN Region.

Furthermore, this study focuses on the effect of media attention and sentiment on the COVID-19 news on the movement of Sharia stock indexes in the three ASEAN countries. An increasing number of empirical and theoretical studies aim to understand whether economic or political news is the driving force behind price movements and return rates in financial markets (Shi & Ho, 2021). This topic remains a subject of scientific discourse among academics and researchers. Previous research revealed that the news media plays a vital role in influencing the stock market's performance. Narayan and Narayan (2017) have proven that it is not only oil prices that significantly affect stock prices and returns. The news related to them can also affect investor behaviour and stock returns.

Furthermore, Ederington and Lee (1993) have observed that most of the volatility in financial markets is regularly affected by the announcement of published macroeconomic information. This finding is supported by Barberis et al. (1998), who found an overreaction in the financial market due to a consistent reporting pattern on macroeconomic indicators. In general, media coverage cannot be ignored when predicting movements in economic or financial variables, including the stock market.

In the context of the COVID-19 pandemic, information from the media influences the dynamics of the stock market, especially during economic or political uncertainty like today. Media reporting tends to highlight extraordinary events with far-reaching impacts, such as the COVID-19 pandemic, which has caused global panic (Young et al., 2013). News related to infectious diseases can be a potent signal affecting investor sentiment. News coverage will attract investors' attention, and this attention is positively correlated with stock price movements (Solomon et al., 2014; Young et al., 2013).

It will be more intriguing to investigate the resilience of Sharia stocks in the ASEAN region to media attention and sentiment on COVID-19 news, given the extensive research on how external factors like macroeconomic conditions influence conventional and Islamic stock indices. The study explores how media coverage and resulting sentiment affect the movement of the Islamic stock index in the ASEAN-3 countries since data on media attention and news sentiment indicators have become available. Live updated data from RavenPack was used to identify which factors contribute to price shocks in the Islamic stock market. Many researchers use important indicators of media coverage provided by RavenPack concerning the COVID-19 pandemic. RavenPack provides essential data on media attention indices through the news and sentiment generated by the COVID-19 issue. This news index is made as daily data and is updated every day.

There are five critical elements to be explored in this study: the level of panic, the level of fake news, the level of media excitement, the level of media sentiment, and the level of information on pandemic transmission determine whether they significantly affect the movement of Islamic stock prices in three ASEAN countries (Indonesia, Malaysia, and Thailand). This study will be one of the first to combine two emerging and interesting issues. Specifically, the study aims to investigate whether media attention and the sentiment it creates can impact the Sharia stock index in the ASEAN region, focusing on Indonesia, Malaysia, and Thailand.

Hypothesis Development

Many academics have researched the effect of the COVID-19 pandemic on economic performance, both in micro and macro contexts in Indonesia. Economic growth, unemployment, poverty, labour welfare, employment, capital market, banking performance, and a country's international trade performance are some macro issues widely associated with the COVID-19 pandemic (Geda, 2020; Ludvigson et al., 2020). As for the micro context, sales, and financial performance of companies, shifts in consumption patterns, market behaviour, investor behaviour, and changes in marketing strategies are issues that are often associated with COVID-19 (Andrei & Hasler, 2014; Rashid et al., 2014; Zargar & Kumar, 2021). This study focuses on the effect of COVID-19 news on the capital market.

Studies have examined the effect of the COVID-19 pandemic on conventional and Islamic capital markets, taking into account indicators such as daily cases, death rates, cure rates, and vaccination rates. For example, Baig et al. (2021) analyzed the effect of these indicators on liquidity and volatility in the United States capital market. Daily cases and deaths increased liquidity and volatility, while mobility restrictions and negative sentiment regarding COVID-19 news worsened liquidity and stability.

The researchers also observed how the media contributed to the news they produced. The media plays an essential role in influencing the sentiment and behaviour of investors in the capital market. It used effects caused by pandemic reporting that began to emerge last year. For example, Zhang et al. (2022) have examined how the impact of media attention and media exposure through the news of COVID-19 on the volatility of world gold, bitcoin, and crude oil prices in the short and long term. Media attention and the sentiment triggered by the COVID-19 news affect short-term and long-term volatility and returns in global gold, bitcoin, and crude oil markets, especially for news sentiment.

Ormos (2011), Tetlock (2007), and Zhang et al. (2022) have observed how investor sentiment and the effect of media coverage on the macroeconomic conditions of a country and specific information related to the condition of a company on the volatility of the stock market in the world. Tetlock (2007), in his research, measures the interaction between the media and the stock market quantitatively using daily content from the famous Wall Street Journal column. He found that high media pessimism pushed down market share prices, followed by a breakdown in fundamental conditions. This research also shows that unusually high pessimism will increase market trading volume.

Cepoi (2020) explained that the panic and excitement in the media coverage of COVID-19 and the resulting sentiment significantly negatively affected stock returns. This study is supported by several other studies from Shi & Ho (2021) and TAN (2021a), which obtained the same findings. Several other studies also explain that the fake news and contagion indexes significantly affect stock price movements and abnormal returns (Biktimirov et al., 2021; Huynh et al., 2021). Based on the explanation above, the following are research hypotheses that must be proven in this study:

H1: *The Panic Index, which measures the level of panic caused by media coverage of COVID-19, negatively affects the movement of Sharia stock indices.*

H2: *Media Hype Index, which is the excitement created by media coverage of COVID-19, negatively affects the movement of Sharia stock indices.*

H3: *Sentiment Index on COVID-19 has a positive effect on the movement of Sharia stock indices.*

H4: *Fake News Index, which is the level of fake news related to COVID-19, negatively affects the movement of Sharia stock indices.*

H5: *Contagion Index, which is the information on the level of transmission of COVID-19, negatively affects the movement of Sharia stock indices.*

Figure 2 illustrates the hypotheses of this study:

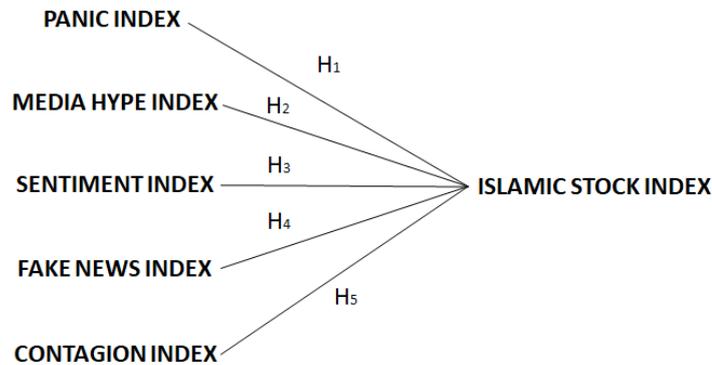


Figure 2. Research Conceptual Model

Method

This quantitative study employed an explanatory approach to provide evidence supporting an explanation of scientific and social phenomena using questionnaires, random sampling, interviews, group discussions, and other statistical procedures (Heppner et al., 2008). The hypothesis testing with causality design was used to find the relationships between the observed variables and the implications behind them (Kothari, 2004). The research problem is answered by observing a sample of the population and analyzing it using a numerical approach through the help of statistical analysis tools, which are then discussed and presented with a causal system so that readers know the relationship found in each variable to the dependent variable.

The population of this study is all ASEAN member countries with the Sharia stock index. The sampling method used in this study is a non-probability purposive sampling method in which the researcher sets a criterion for selecting the research sample. There are two criteria set for choosing which Islamic stock index to be the research sample. Firstly, the selected country must have an active Sharia stock index that provides open index data during the research period from February 3, 2020, to January 29, 2021. Secondly, countries with Sharia stock indexes must also have data on essential elements of media attention and sentiment on COVID-19 news provided by RavenPack.

Indonesia, Malaysia, Singapore, and Thailand are the four countries that meet the criteria above. These countries have Islamic stock indexes that provide open index data and data on essential elements of media attention and sentiment on COVID-19 news by RavenPack. From these countries, we selected three Sharia stock indices as samples, namely the Financial Times Stock Exchange (FTSE) SET Shariah Index in Thailand, the Financial Times Stock Exchange (FTSE) Malaysia EMAS Shariah Index in Malaysia, and the Indonesia Sharia Stock Index (ISSI).

The study observes 362 daily periods, the total time series data. Therefore, the total data observed in this study is 1086 (cross-section data * time series data), which was

analyzed using panel regression. This study used secondary quantitative data from RavenPack, which amounted to 1086 data. This number is from the three observed ASEAN countries during the 362-day study period. The data was collected through documentation. Researchers gathered Sharia stock index data in the three countries and essential elements of media attention and news sentiment to meet the target sample size.

We followed the research from [Cepoi \(2020\)](#), [Huynh et al. \(2021\)](#), [Shi & Ho \(2021\)](#), and [TAN \(2021a\)](#) to use the COVID-19 news-related variables from Ravenpack. This software offers real-time media analytics, investigating announcements highlighting critical concerns associated with the Coronavirus pandemic. There are five observed media indicators and one dependent variable in this research, which are:

Table 1. List of Variables and Their Description

| Variables | Source and Description |
|------------------------------------|--|
| Islamic Stock Index Movement (ISS) | A statistical metric reflecting the total price movement of a group of Islamic shares chosen based on specific criteria and techniques and examined regularly. Source: Yahoo Finance and Bloomberg |
| Panic Index (PI) | It tracks the news coverage that mentions fear or hysteria and coronavirus. The values range from 0 to 100. The higher the index value, the more media allusions to panic. Source: www.ravenpack.com |
| Media Hype Index (MHI) | It calculates the proportion of news stories that mention the novel coronavirus. The values range from 0 to 100. Source: www.ravenpack.com |
| Sentiment Index (SI) | It assesses the amount of emotion against all entities mentioned in the news in addition to the coronavirus. The index goes from -100 (most negative) to 100 (most positive), with 0 representing a neutral attitude. Source: www.ravenpack.com |
| Fake News Index (FNI) | Along with COVID-19, it evaluates the degree of media discourse about the novel virus that refers to disinformation or fake news. Values range from 0 - 100, with a value of 2.00 indicating that false information and COVID-19 are mentioned in 2% of all news worldwide. Source: www.ravenpack.com |
| Contagion Index (CI) | It computes the proportion of all entities (places, businesses, etc.) mentioned in the media in conjunction with COVID-19. The values range from 0 to 100. Source: www.ravenpack.com |

The data analysis technique used in this study was panel data regression, which combines cross-sectional and time-series (pooling) data types. It produces more diverse data with greater degrees of freedom, is more informative, has lower collinearity levels, and is more efficient. The EViews 9 was used to run this analysis technique. [Baltagi \(2005\)](#) dan [Hsiao \(2010\)](#) explain three steps in panel data regression analysis: classical assumption test, model estimation test, and hypothesis testing.

Because panel data regression is an expanded version of linear regression, the classical assumption test is an absolute requirement. The assumptions that must be met in the classic panel regression assumption test depend on the selected estimator model. When CEM (Common-Effect Model) is selected, all classical assumption tests (normality, autocorrelation, multicollinearity, and heteroscedasticity) must be fulfilled. The FEM

(Fixed-Effect Model) requires only multicollinearity and heteroscedasticity assumption tests. The multicollinearity assumption must be fulfilled if the REM (Random-Effect Model) is chosen. This estimator model is immune to heteroscedasticity issues (Ekananda, 2018; Sitorus & Yuliana, 2018). The equations for the panel data regression model in this study are as follows:

$$Y_{1it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \mu_{it} \quad (1)$$

Y : Islamic Stock Index Movement (ISS)

X : Panic Index (PI)

X₂ : Media Hype Index (MHI)

X₃ : Fake News Index (FNI)

X₄ : Sentiment Index (SI)

X₅ : Contagion Index (CI)

μ_{it} : Error

β_0 : Constanta

$\beta_{1,2,3,4,5}$: Line Coefficient

I : Country

t : Days (Period)

Result

After adjusting the results, the number of observed data in EViews 9 was 726 out of the 1,086 collected in this study. However, since the Islamic stock index of each country does not provide data on weekends and national holidays, the variable measuring its movement had missing values. Therefore, EViews 9 software automatically adjusted the amount of data through the unstructured balanced panel process during panel regression analysis.

Table 2. Results of Descriptive Statistical Analysis

| | ISS | PI | MHI | FNI | SI | CI |
|--------------|----------|----------|----------|----------|-----------|-----------|
| Mean | 4547.202 | 2.259544 | 53.14727 | 1.402218 | -8.312094 | 4.071966 |
| Median | 1056.365 | 1.997498 | 52.35500 | 0.710000 | -7.490000 | 4.096509 |
| Maximum | 13646.60 | 5.876223 | 90.23000 | 42.35000 | 46.28000 | 4.569025 |
| Minimum | 115.9500 | 0.979796 | 15.75000 | 0.000000 | -56.41000 | 2.995732 |
| Std. Dev. | 5575.646 | 0.891653 | 13.03971 | 2.776231 | 14.28224 | 0.230334 |
| Skewness | 0.714676 | 1.573986 | 0.031448 | 7.553628 | -0.163039 | -0.791893 |
| Kurtosis | 1.580337 | 5.640365 | 2.765084 | 84.25682 | 3.263898 | 4.096958 |
| Jarque-Bera | 122.7693 | 510.6579 | 1.789029 | 206634.7 | 5.323063 | 112.2787 |
| Probability | 0.000000 | 0.000000 | 0.408806 | 0.000000 | 0.069841 | 0.000000 |
| Sum | 3301268. | 1640.429 | 38584.92 | 1018.010 | -6034.580 | 2956.247 |
| Sum Sq. Dev. | 2.25E+10 | 576.4075 | 123274.7 | 5587.908 | 147887.2 | 38.46399 |
| Observations | 726 | 726 | 726 | 726 | 726 | 726 |

The probability value of the Jarque-Bera test, which is less than 0.05, indicates that the entire data set is not normally distributed. However, even though the data series in this study were not normally distributed, the data analysis process using panel regression could still be carried out. Panel data regression does not require the assumption of normally distributed data because this technique involves a large number of sample data

(1086) which makes this regression technique immune to normality assumptions (Ekananda, 2018; Ghozali, 2018; Gujarati & Porter, 2009).

Unlike the linear version, only two classical assumptions must be met in panel data regression, namely the assumption of multicollinearity and heteroscedasticity (Baltagi, 2005; Wooldridge, 2001). The Glejser test was chosen to test the assumption of heteroscedasticity. The collinearity test shows an assumption of multicollinearity among the independent variables. It aims to ensure that the R-square and error estimation values are generated accurately without any bias caused by strong correlations between variables or cross-sectional samples. In addition, because this study uses more than one independent variable, the assumption of multicollinearity must still be tested to ensure that none of the variables is correlated with a degree of significance that is too high (above 0.80) (Ekananda, 2018; Hsiao, 2010; Sitorus & Yuliana, 2018).

Table 3. Glejser Test Result

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|------------------------|-------------|----------|
| C | 77.68292 | 280.9951 | 0.276457 | 0.7823 |
| PI | 28.16878 | 19.15812 | 1.470331 | 0.1419 |
| MHI | 0.911805 | 1.447631 | 0.629860 | 0.5290 |
| FNI | 8.105535 | 5.494303 | 1.475262 | 0.1406 |
| SI | 0.209133 | 1.089486 | 0.191956 | 0.8478 |
| CI | -15.56710 | 74.88621 | -0.207877 | 0.8354 |
| R-squared | 0.010697 | Mean dependent var | | 136.0301 |
| Adjusted R-squared | 0.003827 | SD dependent var | | 400.6384 |
| SE of regression | 399.8711 | Akaike info criterion | | 14.82839 |
| Sum squared resid | 1.15E+08 | Schwarz criterion | | 14.86631 |
| Log-likelihood | -5376.706 | Hannan-Quinn criteria. | | 14.84302 |
| F-statistic | 1.557010 | Durbin-Watson stat | | 1.718471 |
| Prob(F-statistic) | 0.170006 | | | |

The heteroscedasticity assumption test was used to see whether the variance between the residuals of one independent variable and another in observation differs. Table 3 describes that each independent variable has a probability value of more than 0.05 (more than the critical value of 0.05). The insignificant value of the probability value in the Glejser test indicates that there is no assumption of heteroscedasticity among the individual cross-sectional samples.

The next classic assumption that must be passed is the multicollinearity test. This test shows whether there was a high correlation between the independent variables. There has been multicollinearity if there is a correlation value between independent variables of 0.8 or more. The table above shows that the highest correlation value between variables is 0.487661 (MHI to CI). So, it can be concluded that this research data has no multicollinearity problem. Given the two most critical classical assumptions in panel data regression analysis have passed the test, it concluded that the data set in this study is free from classical assumptions, particularly multicollinearity and heteroscedasticity. Therefore, the data analysis process can be continued to the model estimation test process and hypothesis testing.

Table 4. Multicollinearity Assumption Test Results

| | PI | MHI | FNI | SI | CI |
|-----|-----------|-----------|-----------|-----------|-----------|
| PI | 1.000000 | 0.407813 | 0.176568 | -0.241080 | 0.076467 |
| MHI | 0.407813 | 1.000000 | 0.190510 | -0.130909 | 0.487661 |
| FNI | 0.176568 | 0.190510 | 1.000000 | -0.056945 | 0.073280 |
| SI | -0.241080 | -0.130909 | -0.056945 | 1.000000 | -0.061413 |
| CI | 0.076467 | 0.487661 | 0.073280 | -0.061413 | 1.000000 |

The model estimation test was used to estimate the parameters of the best panel data regression model among the three options: the common effect model, the fixed-effect model, and the random effect model. Three tests must be carried out in selecting the model: the Chow test, the Hausman test, and the Lagrange Multiplier (LM) test. The Chow test determines which model is the best between CEM and FEM. The table below shows the Chow test results where the Chi-square Cross-section's probability value is 0.0000 (<0.05). The probability value smaller than the error threshold (0.05) indicates that the FEM model is better used as an estimator model in this study than the CEM model. If the Chow test produces a significant Chi-square value and chooses the FEM model, then the process is continued with the Hausman test.

Table 5. Chow Test Result

| Effects Test | Statistic | d.f. | Prob. |
|--------------------------|--------------|---------|--------|
| Cross-section F | 20583.233613 | (2,718) | 0.0000 |
| Cross-section Chi-square | 2952.061750 | 2 | 0.0000 |

The Hausman test was conducted to determine which estimator model is better between FEM and REM. Table 6 shows the Hausman test results. The Chi-square probability value of the Hausman test is 0.0000 (<0.05), which means that the best method that should be used as a model estimator is FEM rather than REM. Since the Hausman test shows that FEM has been chosen and is better than REM, the Lagrange Multiplier test is unnecessary. From the explanation of the model estimation test process above, we can conclude that FEM is the best estimator model for CEM and REM. After the model estimation test is carried out, the following is to test the hypothesis.

Table 6. Hausman Test Result

| | Coefficient | | | Sqrt (diag (V b-V_B)) S.E. |
|-----|-------------|-----------|------------------|----------------------------|
| | (b) FEM | (B) REM | (b-B) Difference | |
| PI | -80.43266 | -184.1796 | 103.7469 | 6.179621 |
| MHI | -11.74183 | -135.7001 | 123.9583 | 4.781899 |
| FNI | 2.165822 | -13.5808 | 15.74662 | .9052699 |
| SI | 10.38096 | .8723188 | 9.508641 | .4841272 |
| CI | -71.3824 | 8098.56 | -8169.942 | 318.9421 |

b= consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic

$$\text{Chi2 (2)} = \{b-B\}' [V_b-V_B]^{-1} \{b-B\}$$

$$= 669.52$$
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

The probability value, smaller than the error threshold (0.05), indicates that the hypothesis is accepted. It means the FEM model is better used as an estimator model in this study than the CEM model. If the Chow test produces a significant Chi-square value and chooses the FEM model, then the test was continued with the Hausman test.

Table 7. Fixed-Effect Model as the Selected Estimator Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---------------------------------------|-------------|------------------------|-------------|----------|
| C | 5726.906 | 482.8369 | 11.86095 | 0.0000 |
| PI | -80.43275 | 29.17639 | -2.756775 | 0.0060 |
| MHI | -11.74182 | 2.435973 | -4.820179 | 0.0000 |
| FNI | 2.165818 | 8.360406 | 0.259057 | 0.7957 |
| SI | 10.38095 | 1.661080 | 6.249516 | 0.0000 |
| CI | -71.38227 | 133.3163 | -0.535435 | 0.5925 |
| Effects Specification | | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.988213 | Mean dependent var | | 4547.202 |
| Adjusted R-squared | 0.988098 | SD dependent var | | 5575.646 |
| SE of regression | 608.2848 | Akaike info criterion | | 15.67012 |
| Sum squared resid | 2.66E+08 | Schwarz criterion | | 15.72067 |
| Log-likelihood | -5680.254 | Hannan-Quinn criteria. | | 15.68963 |
| F-statistic | 8599.376 | Durbin-Watson stat | | 0.107918 |
| Prob(F-statistic) | 0.000000 | | | |

Three hypothesis tests were carried out in panel data regression analysis. The three tests are the coefficient of determination test, F test (simultaneous test), and t-test (partial test). Table 7 shows that the R-square value of the Fixed-Effect Model is 0.988213. This value indicates that the independent variables (PI, MHI, FI, SI, and CI) in this study contributed to influencing the movement of the Islamic stock index by 98.82%, and the rest was affected by other variables outside of this research model.

Table 5 shows that the probability value of the F test is 0.0000, which is smaller than the error value (0.05). This means that H₀ is rejected, and it indicates that the panic index (PI), the media hype index (MHI), the level of fake news index (FNI), the level of sentiment index to the news of COVID-19 (SI), and the level contagion index (CI) together significantly affect the movement of the Islamic stock index (ISS).

The last step was the essential process to answer the hypothesis built in this study: the t-test (partial test). Table 7 shows the results of the t-test for each independent variable. From the five essential indicators of the effect of media attention on the COVID-19 issue, the variable of the Panic Index has a coefficient value of -80.43275 and a t-test probability value of 0.0000, which is smaller than an error value of 0.05. It indicates that the panic index significantly negatively affects the Islamic stock index movements.

The variable of the Media Hype Index has a coefficient value of -11.14782 and a significant probability value of 0.0000, which is smaller than the error threshold (0.05). This value means that the level of media excitement, as proxied by the media hype index variable, has a significant negative effect on the movement of the Islamic stock index.

The results of a significant relationship were also found in the variable level of public sentiment towards the COVID-19 news as proxied by the sentiment index. The

coefficient value of the variable of the sentiment index is 10.93805, and the t-test probability value is 0.0000, which is smaller than the error limit value (0.05). The sentiment index positively affects the Islamic stock index movement.

On the other hand, as proxied by the fake news index, the variable level of fake news in the media was proven to have no significant effect on the Sharia stock index movements in the three ASEAN countries. The t-test probability values and the regression coefficient values for this variable are 0.7957 (>0.05) and 2.1658, respectively. The same is true for the contagion index variable.

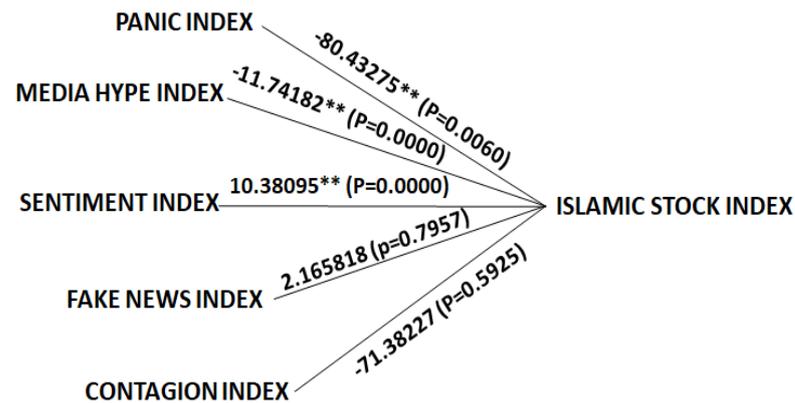


Figure 3. Summary of Hypothesis Test Results

Discussion

The results of this study have strengthened the previously built theory regarding the magnitude of media coverage's role in influencing people's behaviour and mindset individually and globally (Potter, 2017; Qader & Bin Zainuddin, 2011; Yörük, 2012). The media can negatively or positively affect people's mindsets and behaviour, depending on the content delivered. Associated with the COVID-19 pandemic, events that occur worldwide and cause world health and economic crisis have always been the primary attention of the media (Solomon et al., 2014; Young et al., 2013). Given that the global community immediately consumes news related to such issues, companies operating in the media industry tend to view this as a promising source of profit.

This study found that the level of panic in the news media significantly negatively affected the performance of the Islamic capital market in the three ASEAN countries. The bigger the media panic index, the more the Islamic stock index will be corrected negatively. From a psychological point of view, media coverage of traumatic events, particularly disasters, raises anxiety levels, including news about the COVID-19 pandemic (Collimore et al., 2008). News mediates how the media influences investors' feelings. The fear and anxiety created by the media are the primary considerations for investors in assessing risk. Investors can consider uncontrolled health and economic crises such as COVID-19 a considerable risk because they create fear, pessimism, and unrest in the global community. Hence, investors tend to avoid the risks posed in the capital market during the pandemic by releasing their shares. Conditions make the stock price decline in the market.

This study shows that the news media's excitement about the COVID-19 pandemic, as proxied by the Media Hype Index, has a significant negative effect on the movement of the Islamic stock index. The greater the index value of the media frenzy regarding the COVID-19 issue, the more the Sharia stock index is corrected (down). This study supports previous studies from [Tan \(2021a;2021b\)](#) and [Zargar and Kumar \(2021\)](#), who found that the Media Hype Index on COVID-19 significantly negatively affected returns and stock prices both individually and collectively in the stock market. Conversely, this study presents contrasting findings to those of [Rakshit and Neog \(2021\)](#), who concluded that media frenzy about an incident positively affects stock market performance. This research shows that both the conventional and Islamic stock markets are significantly affected by the hype in media coverage of the pandemic issue. The characteristics of Islamic stocks with substantial underlying assets based on actual economic activity have nothing to do with the media effects caused by the news of the COVID-19 pandemic. Not only is the stock market affected by this variable, but research from [Zhang et al. \(2021\)](#) shows that the level of hype in the media about COVID-19 has also affected the global gold, bitcoin, and crude oil markets.

One aspect that is directly affected by media coverage is investor sentiment and behaviour in the capital market ([Blitz et al., 2020](#); [Haroon & Rizvi, 2020](#); [Jiao & Walther, 2016](#); [Potter, 2017](#); [Qader & Bin Zainuddin, 2011](#); [Slater & Rasinski, 2005](#); [Strycharz et al., 2018](#); [Yörük, 2012](#)). This research has supported previous research such as [Cepoi \(2020\)](#) and [Tan \(2021b\)](#), which explained that public sentiment, especially investors, to the news of the COVID-19 pandemic negatively affected price movements and stock returns in the capital market. On the contrary, this study has findings contrary to [Haroon and Rizvi \(2020\)](#). Their research uncovered a significant positive relationship between panic in COVID-19-related news media and price volatility and stock returns of various industries within the United States capital market. Moreover, this study has also strengthened the results of previous studies ([Biktimirov et al., 2021](#); [Huynh et al., 2021](#); [Rashid et al., 2014](#); [Shi & Ho, 2021](#)) that the returns and prices of conventional and sharia shares, whether viewed individually or together, were affected by public sentiment towards news of the COVID-19 pandemic. Interestingly, while the average annual and mode values of the public sentiment index for COVID-19-related news were negative in this study, it had a significant positive effect on the performance of the Islamic capital market in the three ASEAN countries. This study found that the level of public sentiment towards the news of COVID-19 positively affected the movement of the Islamic stock index in the three ASEAN countries.

However, the fake news index and the contagion index were not found to affect the price movements of Islamic shares. This study also supports previous research stating that the critical elements of media effects that have a significant effect on Islamic capital markets in the three ASEAN countries are the panic index, media hype index, and sentiment index variables ([Cepoi, 2020](#); [Shi & Ho, 2021](#); [TAN, 2021a](#)). Although the fake news index has no significant effect on the Sharia stock index's movement, Indonesia has the highest fake news index, sentiment index, and panic index compared to the other two ASEAN countries in this study. This finding shows that the government must move to tackle fake news, especially on social media.

ASEAN must foster a news media climate to calm investor sentiment in the stock market and other investment sectors. Technical factors are important for investors in

countries with Islamic stock exchanges, such as Malaysia and Indonesia. Meanwhile, fundamental analysis is preferred because there are fewer stock options to perform technical maneuvers in countries with small Islamic capital markets. The COVID-19 pandemic poses a risk to investors because it affects the performance of businesses where they own stock. The generated media interest and sentiment can transform into rumours, influencing trading volume and investors' technical analysis.

The findings have practical and theoretical implications for the Islamic capital market and the news media business. The Republic of Indonesia's Ministry of Communication and Informatics must sustain media activities. It attracts investors by controlling the broadcasting of media businesses in Indonesia via an appeal. When reporting a natural disaster, the positive narrative style of news does not cause panic, as it did in Japan. The government is expected to control the media industry by providing information to the public regarding COVID-19 news so that investors can consider any information in investing. Investors can use this research to make more informed decisions about consuming information from the news media to avoid panic mode that may harm the stock price index. As a community or association, ASEAN should prioritize cooperation and strengthening the media sector. It can be achieved through regional-level agreements or conventions that establish principles and rules for disaster reporting, creating a conducive reporting climate.

This study may have limitations, as the variables have not been used as control variables. It is important to include them to ensure the data analysis results are unbiased. Future research could incorporate significant variables related to fundamental and technical factors that may affect the movement of the Islamic stock index in the ASEAN region and beyond.

Conclusion

Media coverage has a significant effect on a country's stock price movements. Depending on specific conditions, news related to COVID-19 can be perceived as positive or negative for the stock market. The panic caused by media coverage significantly negatively affects the Islamic stock index's movement in the three ASEAN countries studied, as indicated by the Sharia stock index's trend. A higher value of the panic index for COVID-19 news is associated with a greater negative correction of the Sharia stock index. The media's excitement in reporting on the COVID-19 issue significantly negatively affects the movement of the Islamic stock index. The Islamic stock index experiences a negative or downward correction as the level of excitement in the COVID-19 news media increases. The movement of the Islamic stock index is significantly and positively affected by the public sentiment towards COVID-19 news. A rise in public sentiment results in a corresponding increase in the Sharia stock index. The level of media attention on COVID-19 news affects the price movements of Islamic stocks in all three ASEAN countries studied. Indonesia has the highest indices for fake news, sentiment, and panic among the countries. It highlights the need for the Indonesian government to address fake news, particularly on social media. The Ministry of Information and Communication should regulate media activities to create a favourable environment for investors.

Authors' Declaration

Syarifa Rahmi developed the beginning idea of the research framework, wrote for the first until half-third chapter, and collected raw data. Agung Maulana wrote for the third until fifth chapter, collected data, transformed data, played with the computation data running, and interpreted the data to provide deep discussion. Nur Fatwa verified the analytical methods and encouraged and supervised the findings of this work. All authors contributed to the final manuscript and together discussed the results.

ORCID

Syarifa Rahmi  -

Nur Fatwa  -

Agung Maulana  <https://orchid.org/0000-0003-3293-0141>

References

- Andrei, D., & Hasler, M. (2014). Investor attention and stock market volatility. *The Review of Financial Studies*, 128(1), 33–72. <https://doi.org/10.1093/rfs/hhu059>
- Ashraf, D., Rizwan, M. S., & Ahmad, G. (2022). Islamic equity investments and the COVID-19 pandemic. *Pacific-Basin Finance Journal*, 73, 101765. <https://doi.org/10.1016%2Fj.pacfin.2022.101765>
- Tanusdjaja, H., & Nariman, A. (2019). Faktor-Faktor yang mempengaruhi indeks harga saham gabungan. *Jurnal Ekonomi*, 24(1), 144-158. <https://doi.org/10.24912/je.v24i1.546>
- Baig, A. S., Butt, H. A., Haroon, O., & Rizvi, S. A. R. (2021). Deaths, panic, lockdowns and US equity markets: The case of COVID-19 pandemic. *Finance Research Letters*, 38(July 2020), 101701. <https://doi.org/10.1016/j.frl.2020.101701>
- Baltagi, B. H. (2005). *Econometric analysis of data panel* (Third edition). John Wiley & Sons, Ltd. <https://library.wbi.ac.id/repository/27.pdf>
- Barberis, N., Shleifer, A., & Vishny, R. (1998). A model of investor sentiment. *Journal of Financial Economics*, 49(3), 307–343. [https://doi.org/10.1016/s0304-405x\(98\)00027-0](https://doi.org/10.1016/s0304-405x(98)00027-0)
- Biktimirov, E. N., Sokolyk, T., & Ayanso, A. (2021). Sentiment and hype of business media topics and stock market returns during the COVID-19 pandemic. *Journal of Behavioral and Experimental Finance*, 31, 100542. <https://doi.org/10.1016/j.jbef.2021.100542>
- Blitz, D., Huisman, R., Swinkels, L., & van Vliet, P. (2020). Media attention and the volatility effect. *Finance Research Letters*, 36(October 2019), 101317. <https://doi.org/10.1016/j.frl.2019.101317>
- Cepoi, C. O. (2020). Asymmetric dependence between stock market returns and news during COVID-19 financial turmoil. *Finance Research Letters*, 36, 101658. <https://doi.org/10.1016/j.frl.2020.101658>
- Collimore, K. C., McCabe, R. E., Carleton, R. N., & Asmundson, G. J. G. (2008). Media exposure and dimensions of anxiety sensitivity: Differential associations with PTSD symptom clusters. *Journal of Anxiety Disorders*, 22(6), 1021–1028. <https://doi.org/10.1016/j.janxdis.2007.11.002>
- Dilla, S., Sari, L. K., & Achسانی, N. A. (2020). Estimating the Effect of the Covid-19 Outbreak Events on the Indonesia Sectoral Stock Return. *Jurnal Aplikasi Bisnis Dan Manajemen*, 6(3), 662–668. <https://doi.org/10.17358/jabm.6.3.662>

-
- Ederington, L. H., & Lee, J. H. (1993). How markets process information: News releases and volatility. *The Journal of Finance*, 48(4), 1161-1191. <https://doi.org/10.1111/j.1540-6261.1993.tb04750.x>
- Ekananda, M. (2018). Analisis ekonometrika data panel: Bagi penelitian ekonomi, manajemen, dan akuntansi. (Patent No. EC00201810375). <https://scholar.ui.ac.id/en/publications/analisis-ekonometrika-data-panel-bagi-penelitian-ekonomi-manajeme>
- Erdogan, S., Gedikli, A., & Çevik, E. İ. (2020). Volatility spillover effects between Islamic stock markets and exchange rates: Evidence from three emerging countries. *Borsa Istanbul Review*, 20(4), 322–333. <https://doi.org/10.1016/j.bir.2020.04.003>
- Geda, A. (2020). The macroeconomic and social impact of COVID-19 in Ethiopia and suggested direction for a policy response. *Department of Economics, AAU*. https://unctad.org/system/files/official-document/ser-rp-2021d18_en.pdf
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25* (Cetakan ke). Badan Penerbit Universitas Diponegoro. http://repo.unikadelasalle.ac.id/index.php?p=show_detail&id=13099
- Gujarati, D. N., & Porter, D. C. (2009). *Essentials of Econometrics* (4th Edition). McGraw-Hill Education. https://www.academia.edu/41734436/ESSENTIALS_OF_ECONOMETRICS_FOURTH_EDITION
- Haroon, O., & Rizvi, S. A. R. (2020). COVID-19: Media coverage and financial markets behaviour—A sectoral inquiry. *Journal of Behavioral and Experimental Finance*, 27, 100343. <https://doi.org/10.1016/j.jbef.2020.100343>
- Heppner, P., Wampold, B., & Kivlighan, D. (2008). *Research design in counselling* (M. Flemming (Third edition). Thomson Brooks/Cole.
- Hsiao, C. (2010). Analysis of panel data. *Cambridge University Press*. <https://doi.org/10.1017/cbo9780511754203>
- Huynh, T. L. D., Foglia, M., Nasir, M. A., & Angelini, E. (2021). Feverish sentiment and global equity markets during the COVID-19 pandemic. *Journal of Economic Behavior and Organization*, 188, 1088–1108. 3. [Layout_Voll. 8, No. 1 \(2022\) 31-\(1\).doc](https://doi.org/10.1016/j.jebo.2021.08.011)
- Jiao, P., & Walther, A. (2016). Social media, news media, and the stock market. *SSRN Electronic Journal*, January 2016. <https://doi.org/10.2139/ssrn.2755933>
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International. https://repository.dinus.ac.id/docs/ajar/Kothari_-_Research_Methodology_Methods_and_Techniques_-_2004.pdf
- Ludvigson, S. C., Ma, S., & Ng, S. (2020). *COVID-19 and the macroeconomic effects of costly disasters*. National Bureau of Economic Research. <https://ideas.repec.org/p/nbr/nberwo/26987.html>
- Narayan, S., & Narayan, P. K. (2017). Are oil price news headlines statistically and economically significant for investors? *Journal of Behavioral Finance*, 18(3), 258–270. 2. [Layout_Voll. 8, No. 1 \(2022\) 19-30.pdf](https://doi.org/10.1016/j.jbef.2017.06.002)
- OECD. (2020). Coronavirus: The world economy at risk. In *OECD Interim Economic Assessment* (Issue March). <http://www.oecd.org/berlin/publikationen/Interim-Economic-Assessment-2-March-2020.pdf>
- Ormos, M. (2011). Impacts of public news on stock market prices : Evidence from S & P500 1. *Interdisciplinary Journal of Research in Business*, 1(2), 1–17.
-

- https://www.researchgate.net/publication/228566692_Impacts_of_Public_News_on_Stock_Market_Prices_Evidence_from_SP5001
- Paltrinieri, A., Floreani, J., Kappen, J. A., Mitchell, M. C., & Chawla, K. (2019). Islamic, socially responsible, and conventional market comovements: Evidence from stock indices. *Thunderbird International Business Review*, 61(5), 719–733. <https://doi.org/10.1002/tie.22027>
- Potter, W. J. (2017). What is a media effect? In *Media Effects* (1st ed., pp. 33–50). SAGE Publications Inc.2. <https://doi.org/10.1002/9781118781911.ch2>
- Purwaningsih, D., & Sulistiyani, T. (2020). Analisis faktor-faktor yang mempengaruhi indeks harga saham gabungan di bursa efek Indonesia Periode. *Jurnal Fokus Manajemen Bisnis*, 5(1), 1. <https://doi.org/10.12928/fokus.v5i1.1612>
- Qader, I. K. A., & Bin Zainuddin, Y. (2011). The impact of media exposure on intention to purchase green electronic products amongst lecturers. *International Journal of Business and Management*, 6(3). <https://doi.org/10.5539/ijbm.v6n3p240>
- Rakshit, B., & Neog, Y. (2021). Effects of the COVID-19 pandemic on stock market returns and volatilities: evidence from selected emerging economies. *Studies in Economics and Finance*, July. <https://doi.org/10.1108/SEF-09-2020-0389>
- Rashid, M., Hassan, K. M., & Yein, N. Y. (2014). Macroeconomics, investor sentiment, and Islamic stock price index in Malaysia. *Journal of Economic Cooperation and Development*, 35(4), 221–236. <https://jecd.sesric.org/pdf.php?file=ART14121101-2.pdf>
- Raza, N., Ibrahimy, A. I., Ali, A., & Ali, S. (2016). Gold and Islamic stocks: A hedge and safe haven comparison in time-frequency domain for BRICS markets. *The Journal of Developing Areas*, 50(6), 305–318. <https://doi.org/10.1353/jda.2016.0146>
- Sadiq, M., Hsu, C. C., Zhang, Y. Q., & Chien, F. (2021). COVID-19 fear and volatility index movements: empirical insights from ASEAN stock markets. *Environmental Science and Pollution Research*, February 2020, 67167–67184. <https://doi.org/10.1007/s11356-021-15064-1>
- Salisu, A. A., & Vo, X. V. (2020). Predicting stock returns in the presence of COVID-19 pandemic: The role of health news. *International Review of Financial Analysis*, 71(April), 101546. <https://doi.org/10.1016/j.irfa.2020.101546>
- SEVIE. (2021). *Dampak COVID-19 terhadap Pasar Saham Syariah - Event Study di Indonesia*. Universitas Indonesia. <https://doi.org/10.24252/iqtisaduna.v7i1.20214>
- Shi, Y., & Ho, K. Y. (2021). News sentiment and states of stock return volatility: Evidence from long memory and discrete choice models. *Finance Research Letters*, 38(September 2019), 101446. <https://doi.org/10.1016/j.frl.2020.101446>
- Sitorus, Y. M., & Yuliana, L. (2018). Penerapan regresi data panel pada analisis pengaruh infrastruktur terhadap produktifitas ekonomi provinsi-provinsi di luar Pulau Jawa tahun 2010-2014. *Media Statistika*, 11(1), 1–15. <https://doi.org/10.14710/medstat.11.1.1-15>
- Slater, M. D., & Rasinski, K. A. (2005). Media exposure and attention as mediating variables influencing social risk judgments. *Journal of Communication*, 55(4), 810–827. <https://doi.org/10.1111/j.1460-2466.2005.tb03024.x>
- Solomon, D. H., Soltes, E., & Sosyura, D. (2014). Winners in the spotlight: Media coverage of fund holdings as a driver of flows. *Journal of Financial Economics*, 113(1), 53–72. <https://doi.org/10.1016/j.jfineco.2014.02.009>

-
- Strycharz, J., Strauss, N., & Trilling, D. (2018). The role of media coverage in explaining stock market fluctuations: Insights for strategic financial communication. *International Journal of Strategic Communication*, 12(1), 67–85. <https://doi.org/10.1080/1553118X.2017.1378220>
- Tan, Ö. F. (2021a). The effect of pandemic news on stock market returns during the Covid-19 crash: Evidence from international markets. *Connectist: Istanbul University Journal of Communication Sciences*, 0(60), 217–240. <https://doi.org/10.26650/connectist2021-884955>
- Tan, Ö. F. (2021b). The impact of news on Borsa Istanbul During COVID-19 financial turmoil. *Türkiye İletişim Araştırmaları Dergisi/26306220*, 109–124. <https://doi.org/10.17829/turcom.859299>
- Tetlock, P. C. (2007). Giving content to investor sentiment: The role of media in the stock market. *Journal of Finance*, 62(3), 1139–1168. <https://doi.org/10.1111/j.1540-6261.2007.01232.x>
- Wooldridge, J. M. (2001). Econometric analysis of cross-section and panel data. In *The MIT Press* (first, Vol. 1, Issue 1). The MIT Press. <https://doi.org/10.1515/humr.2003.021>
- Yörük, B. K. (2012). The effect of media on charitable giving and volunteering: evidence from the “Give Five” Campaign. *Journal of Policy Analysis and Management*, 31(4), 813–836. <https://doi.org/10.1215/03913263-1240000>
- Young, M. E., King, N., Harper, S., & Humphreys, K. R. (2013). The influence of popular media on perceptions of personal and population risk in possible disease outbreaks. *Health, Risk and Society*, 15(1), 103–114. <https://doi.org/10.1080/13698575.2012.748884>
- Zargar, F. N., & Kumar, D. (2021). Market fear, investor mood, sentiment, economic uncertainty and tourism sector in the United States amid COVID-19 pandemic: A spillover analysis. *Tourism Economics*, 0(0), 1–8. <https://doi.org/10.1177/13548166211052803>
- Zhang, H., Hong, H., Guo, Y., Yang, C. (2022) Information spillover effects from media coverage to the crude oil, gold, and Bitcoin markets during the COVID-19 pandemic: Evidence from the time and frequency domains. *International Review of Economics & Finance*, 267-285. <https://doi.org/10.1016/j.iref.2021.12.005>
-