RESEARCH PAPER

The Impact of Macro-Economic Variables on the Stock Market Performance of the Textile Industry With the Moderating Effect of Covid-19: A Comparative Analysis of Pakistan, Bangladesh, and Siri Lanka

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ABSTRACT

This study is to examine how macroeconomic variables affect stock market performance of emerging and developing countries namely, Pakistan, Bangladesh, and Sri Lanka. For this purpose, we utilized monthly data on macroeconomic variables and COVID-19 along with the stock market performance of textile sectors of the said countries. Our monthly dataset ranges from December-2019 to January-2022. We employed the Pooled OLS model to analyze the interaction between macroeconomic variables and the stock market performance of textile sectors. Empirical findings of the study suggest that oil prices and covid-19 have a negative significant effect on the stock market performance of textile companies in these countries. On the other large scale manufacturing, which is the measure of industrial production and interest rates has a positive significant effect. Our remaining variables exchange rates and CPI are not significantly affecting the stock market performance of the textile companies during the period. Our empirical findings are very important for policymakers and practitioners to make useful policies.

Introduction

COVID's invasion, global market patterns have shifted from traditional to virtual modes. As a result, economic and social systems have been restructured, with technology playing a central role in these transformations. The pandemic has made South Asia's situation more precarious because of the role played by technology. South Asia is home to a quarter of the world's population, the majority of whom are living in poverty. Thus, the pandemic's adverse effects are being felt across society, from the social fabric to the economy. Export-oriented industries, such as the textile industry, were particularly hard hit. Several advantages existed for South Asia before the pandemic's onset, including a large pool of low-cost labour, easy access to water, and expanding cotton markets. The lifting of COVID restrictions has reopened the door to the rest of the world. As a result of these factors, South Asia has the potential to become a major player in the global textile manufacturing and export market. Economic viability can be ensured in this region by capturing worldwide benefits linked with the expansion of the textile industry in this area. Pakistan, Sri Lanka, and Bangladesh are becoming more important sources of textile-related products for European and American markets (Yaseen, et al. 2020). As a result of the low average cost of textile production in South Asia, this assumption is since South Asian economies have a competitive advantage in textile manufacturing. Increased usage of e-commerce in the post-COVID world will allow South Asian countries to increase their production, as globalization expands, and trade obstacles are reduced. In addition to improving commerce between these countries, these vulnerable South Asian regions' economies will benefit from the growth of the textile industry in terms of employment, revenues, consumption, and income. There is overwhelming evidence that an increase in exports is linked to an increase in economic growth in the current research. As a result, countries like Japan, Taiwan, and China, which rely heavily on exports of manufactured goods to fuel their economies, have

made export promotion a priority. Pakistan, Bangladesh, and Sri Lanka export a wide range of textile items, including cotton, textiles, special yarn, silk, carpets, and garments, to most industrialized countries. Only three nations, Pakistan, Bangladesh, and Sri Lanka, produce and export textiles to nearly every developed country. From July to October 2021, Pakistan earned $6 billion in textile exports, a 35% increase over the same period last year, according to the Pakistan Bureau of Statistics (PBS). This region accounts for a significant share of global exports. As a result of the COVID-19 restrictions and a fall in worldwide demand for their products, Bangladesh and Sri Lanka's status has remained subpar. We must remember that for several generations, these three countries have supplied a significant percentage of world textile exports. Considering the pandemic, it is imperative to analyse the factors that influence textile output, export, and earnings, among other things. The success of the textile sector can be affected by a wide range of economic factors. An important factor in determining the value of tradeable products on the international market is the official exchange rate, which is closely tied to trade in each country (Fayaz et al., 2023). To improve aggregate demand, the government can help investors by lowering the interest rate. Otherwise, the economy will contract because of the reduction in investment. The expenses of production, shipping, and manufacturing must all be considered if textile production is to be expanded. Depending on the price of oil, these costs can have a significant impact. Inflation has an essential function in motivating and deciding the profitability of investors during the production process. Since it can be used as a proxy for market activity, the prevalence rate of COVID is particularly noteworthy, and it has been rising over the last two years. More restrictions are placed on economic activity as the number of cases recorded rises, and the reverse is also true. Because of this, im of the study is to evaluate the impact of macroeconomic indicators and external shocks, notably COVID, on the stock market performance of textile sector companies. As a gauge for the economy, the stock market's performance is compared to those of three countries in South Asia. Additional recommendations are made for the future growth of the textile sector and the long-term survival of South Asian economies in this research based on thorough empirical analysis.

Literature Review

Macroeconomic conditions and the textile sector appear to be linked in the literature, as evidenced by numerous studies. However, after the conclusion of the COVID inquiry, there has only been a limited amount of information available on this speculation. The vast majority of studies are country-specific and do not attempt to draw parallels across different countries. Research by Baig (2010) studied Pakistan's place in the global market for textiles and found that its share of that industry has increased considerably in recent years. China was the world's largest exporter of textiles, but Pakistan has now overtaken it as the top exporter. Raw cotton is currently being exported from Pakistan, but completed cotton commodities could help Pakistan increase its overall export revenue (Awais et al., 2021).

In the view of Isharat (2014), the textile sector is one of the most important sources of employment. By shifting labour from agriculture to industry, it bolstered the economy's long-term viability and sustainable growth. Approximately 60% of all exports are made up of cotton-based products including yarn, textiles, and clothing, which the study concludes must be expanded. Using data from 2001 to 2013, Wang (2013) examined the impact of the exchange rate on textile exports in developing Asian nations including Pakistan and China. His study took into account the textile exports from Sri Lanka, Vietnam, Indonesia, and India as well as the exchange rate. The results show that the exchange rate has a favourable and statistically significant effect on the export market for textiles. The currency devaluation lowers the price of our items in foreign markets, which has a favourable impact on exports (Irshad et al, 2022).

According to Kaur (2019), the country's imports and exports are greatly influenced by the actual exchange rate and the rate of population growth. As buyers were able to receive lower-priced textiles due to the rupee's devaluation, India's textile exports increased. The exchange rate and real effective exchange rates appeared as the most critical variables in explaining the export competitiveness of most manufacturing exports. There has been a rise in the import of textile articles, according to Liping (2010). Due to the depreciation, lower-priced textile items would benefit both importers and exporters. Using the Trade Gravity Model, a Chinese study concluded that China's GDP, population, and reliance on foreign trade all had a negative impact on the export performance of textile businesses in China (Liu et al., 2022).

Exports grew as a result of technological advancements and innovation, according to Krugman (2019). For this reason, as well, the study's findings suggest that institutional policy should keep an eye on the currency rate, pricing, and trade barriers, as well as develop growth-oriented policies for low-income nations. Rad (2013) investigated the relationship between oil prices and stock returns in the textile industry of Istanbul. The study examined monthly textile industry data from 1997 to 2011. The results of the counteraction test show that oil prices have a major impact on long-term stock returns. The results indicate that monthly variations in oil prices have a 19% impact on the stock returns of the textile sector (Khan et al., 2022).

Waheed, Wei, and Sarwar (2018) claim that there is a correlation between the stock returns of Pakistani companies and oil prices. Researchers examined stock returns in the chemical, textile, and other industries using panel data from 1998 to 2014 and discovered a positive and statistically significant association between oil prices and stock returns in the nation. The study discovered that positive oil price shocks had a greater effect on Pakistani firm stock returns than negative oil price shocks. Siddiqui and Muhammad (2014a) looked into the relationship between oil price shocks and the performance of the Pakistan stock market throughout the course of 2014. Time series data from 2003 to 2012 can be used to analyse macroeconomic factors such the price of oil, currency volatility, foreign private investment, and political stability. According to a study, changes in the price of oil have a favourable effect on the index of Pakistan's stock market. Additionally, the study discovered that private portfolios and currency rates had a favourable influence on Pakistan's stock market performance, but political instability had a negative impact (Irshad et al., 2023).

Waheed and coworkers' (2020) investigation into the impact of COVID-19 on the performance of the Karachi stock exchange. To calculate the impact of COVID-19 on stock market performance, the researchers developed a quantile-on-quantile method based on secondary and projected data. The COVID-19 was found to have a favourable effect on stock returns in the country, in contrast to developed nations (Irshad et al., 2022). The researchers used a quantile-on-quantile technique to analyse the three COVID-19 scenarios and discovered that governmental interventions improved investor confidence and lessened the negative impact of the pandemic on Karachi's stock exchange performance. Sarrawar et al. (2019) investigated the relationship between crude oil returns and spillover stock market volatility in three Asian nations. The study found that compared to volatility spillover, conditional volatility, and shock dependency had a substantial impact on the stock market's performance, using daily data from December 2016 to the first day of January 2000. The analysis found that whereas there is a one-way spillover from Indian stock returns to oil returns, there is a two-way spillover in the Nikkei stock market between stock and oil returns. The study's findings suggest that holding crude oil can cut portfolio risk by as much as 70%.

In a study published in 2018, Badullahewage and Jayewardenepura looked at macroeconomic factors and the performance of the Sri Lankan stock market. Macroeconomic indicators like inflation and interest rates, as well as GDP, money supply,

and exchange rates, were employed as independent variables, while a performance study of the stock market was used as a dependent variable. According to the findings of the study, there is a statistically significant association between macroeconomic indices and the expansion of Sri Lanka's stock market. The results of the study show that inflation and the rate of exchange of foreign currencies have an impact on the Colombo Stock Exchange's performance. Baranidharan and Vanitha (2016) researched the stock markets in three G20 nations and looked at how macroeconomic and financial factors affected their performance. Using panel data gathered from 1992 to 2013 from nations like India, China (including Hong Kong), Bangladesh, the Philippines, Indonesia, and Sri Lanka, an association between the two variables was investigated. In this study, a self-regressive distributed lag model called the ARDL model was used.

The study discovered that a variety of factors, including domestic credit, GDP, exports, imports, and FDI, have an impact on the stock market capitalization of the countries under review. China, Bangladesh, and India surpassed the other three 3G nations in terms of long-term stability, but the stock market in Indonesia continued to be unsteady. The capitalization of the Sri Lankan stock market was relatively stable compared to the erratic capitalization of the Philippine stock market. Al-Mamun (2013) looked at the relationship between macroeconomic variables and stock market performance in the three G7 nations. ARDL was used to estimate long-term links between macroeconomic data and stock market performance. The study examined data from seven 3G countries between 1980 and 2011. Macroeconomic factors like inflation, the currency rate, and investment were found to have a significant influence on both short- and long-term stock market development. From 1971 to 2005, Waliullah (2010) looked at the relationships between macroeconomic factors, financial indicators, and the Karachi Stock Exchange. Researchers estimated the short- and long-term connections between variables in the study using quarterly time series data and the ARDL approach. Long-term relationships between GDP and stock market performance were found to be positive, whilst those between inflation and long-term relationships were found to be negative.

The impact of macroeconomic uncertainty on volatility was examined using data from the Sri Lankan stock market. From 1998 through 2016, data on each month's inflation, interest rates, money supply, currency exchange rates, stock returns, and volatility were compiled. Macroeconomic factors and stock performance are closely related over time. Exchange rates and Treasury note yields had a negative impact on stock returns, but inflation and the money supply had a positive and noticeable impact. The results of the error correction model show that the average long-term adjustment to short-term disequilibrium is 4.1%. Mahmud, Fahad, and Rahman's (2021) research looked at the relationship between Bangladesh's macroeconomic environment and the growth of the country's textile industry. They concluded that the collaboration was fruitful. The study included information from 31 textile companies during the period of 2011 to 2019. The returns on assets and Tobin's Q were used as dependent variables in this experiment. The debt to equity ratio, asset turnover, growth, debt to asset, export growth, and cost-efficiency all had a major impact on the returns on assets for the textile sector, according to the fixed-effect model. When Bangladesh's firm performance was evaluated using Tobin's Q, it was found that the board's size, age, and export growth all played a role.

Material and Methods

This segment of the study deals with the mechanism and the sources of data collection and the use of the correct methodology to record the impact of oil prices, inflation growth, industrial production, interest rates, exchange rates, and Covid-19 on the stock returns of textile sectors of Pakistan, Bangladesh, and Sri Lanka.

Sample and Population

The population consists of the stock market capitalization of textile companies in Pakistan, Bangladesh, and China along with macroeconomic variables.

Sample

The sample size represents the entire population. The time of the selected sample ranges from Decebner-2019 to January-2022. The frequency of the data period is monthly in order to account the changes in textile companies stock market performance to macroeconomic variables.

Sources of the Data

Secondary data is employed. Secondary data is already readily available for utilization. This study extracted the data on textile companies' stock returns from the websites of the Securities exchanges of Pakistan, Bangladesh, and Sri Lanka. The data related to macrocosmic variables have been collected from different sources. The data on Brent oil prices and exchange rates of different currencies against the us dollar has been collected from ***www.investing.com.*** whereas the data on industrial production and consumer price index are collected from the website of respective countries' Bureau of Statistics. Furthermore, the data related to interest rates has been collected from the annual publication of the respective central banks of these countries. Finally, the data related to Covid-19 has been collected from the website of ***www.worldometers.info.***

Econometric Model

This research depends on quantitative examination with the assistance of an appropriate econometrics model. Since the data contains both the elements, that are; time-series and cross sections. The analysis of the data would be purely panel data analysis.

Panel Data Analysis

According to statistics, it is a blend of both cross-sectional and time-series data. Panel data is divided into 2 types, namely: balanced and unbalanced Panel Data. In the words of Gujrati (2003), Balanced Panel Data is where each cross-section is evaluated for the same periods/series. Unbalanced Panel Data is where each cross section is evaluated for different time periods. As there are three different panel data models based on different cross sectional and time series assumptions. These include the Common Effect Model, Fixed Effect Model, and Random Effect Model. The simplest form of the econometric model is as under:

$$TSMF_{it} = \beta_0 + \beta_1 OP_{it} + \beta_2 CPI_{it} + \beta_3 XR_{it} + \beta_4 IPI_{it} + \beta_5 IR_{it} + \beta_6 Covid\ 19_{it} + e_{it}$$

Where

It= I represent countries; t represents time series

TSMF = Textile Stock Market Performance

OP = Brent Oil Prices

CPI = Consumer Price Index

XR = Domestic Currency Exchange Rates with US Dollar

IP = Industrial Production Index

IR = Short Term Interest Rates

Covid-19 = Novel Corona Virus

Results and Discussion

The data analysis and discussion of the association were included in the results and discussion section.

Table 1
Descriptive Statistics

Items	COVID-19	CPI	XR	Interest Rates	LSMI	Oil Prices	Market Capitalization
Mean	2905.385	190.2341	146.3235	0.067586	233.4521	58.20808	88050.3
Median	1431.5	144.955	160.875	0.069567	144.965	60.38	85612
Maximum	23155	307.49	202.75	0.135121	544.71	90.06	201217.9
Minimum	0	130.45	84.25	0.0381	50	22.44	27759.47
Std. Dev.	4489.586	70.79524	45.84722	0.022001	164.2036	18.09237	38869.96
Skewness	2.716721	0.706944	-0.44315	1.124939	0.774871	-0.24731	1.060811
Kurtosis	10.56914	1.568559	1.508525	4.703937	1.803502	2.148513	4.158355
Jarque-Bera	282.1458	13.15633	9.782584	25.8874	12.45825	3.151423	18.98996
Probability	0.00004	0.00139	0.007512	0.000002	0.001971	0.20686	0.000075
Observations	78	78	78	78	78	78	78

Table 1 indicates the descriptive statistics of the variables involved in the study. The mean value of textile stock market capitalization is 88050.3. It shows a low of 27759.47 and a high of 201217.9. Its standard deviation is 38869.960.11 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to the rest of the IVs. Its maximum is 0.135121 and its minimum is 0.0381. The value of its mean is 0.067586 and the standard deviation is 0.022001. Exchange rate indicates a high of 202.75 and a low of 84.25 and the value of the mean and S.D are 146.3235 and 45.84722, respectively. The min and max values of the consumer price index, which is the proxy of inflation in the country are 307.49 and 130.4, respectively. Its S.D is 70.79524 and the mean is 190.2341. The maximum and minimum of Industrial production are 544.71 and 50. The value of the mean is 233.4521 and S.D is 164.2036. Similarly, the Brent oil prices mean value was 58.20808 dollars per barrel during the study period with min and max values are 90.06 and 22.44 respectively. Further for COVID-19, since its outbreak in Wuhan, it's never been a great threat to the industrial output of developing economies like Pakistan, Bangladesh, and Sri Lanka. The mean positive cases for these countries were 2905.385 along with min and max values 23155 and 0 respectively.

Table 2
Correlation Matrix

Variable	COVID-19	CPI	XR	Interest Rates	LSMI	Oil Prices	Market Capitalization
COVID-19	1	-0.09478	0.232117	-0.29986	-0.12585	0.356452	0.038422
CPI	-0.09478	1	-0.0943	-0.34092	0.097807	0.094941	0.776983
XR	0.232117	-0.0943	1	0.177799	-0.09528	0.052308	-0.74412
Interest Rates	-0.29986	-0.34092	0.177799	1	-0.31692	-0.11961	-0.20366
LSMI	-0.12585	0.097807	-0.09528	-0.31692	1	0.136271	0.080846
Oil Prices	0.356452	0.094941	0.052308	-0.11961	0.136271	1	0.381857
Market Capitalization	0.038422	0.077698	-0.74412	-0.20366	0.080846	0.381857	1

Table 2 elucidates the linkage/relationship among the variables employed specifically in this research. The correlation between market capitalization and covid-19 is weak positive, CPI and exchange rates are negative and Stock returns are negative. This indicates an inverse relationship between these two variables i.e. they move in opposite

directions. If CPI goes up exchange rates goes down. Similarly, the correlation of oil prices with other explanatory variables is positive except for interest rates. The correlation of Large scale manufacturing is negative with COVID-19, exchange rates, and interest rates and positive with CPI, market capitalization, and oil prices. The basic purpose of correlationary analysis is to find the collinearity among the explanatory variables. All of the variables are well within the range and free from multicollinearity issues.

Panel Unit Root Test Analysis

The existence of unit root in the data gives misleading results as it indicates the data isn't stationary. Unit root can be present in panel data because of numeral observations. Levin, Lin, Chu t* (2002), and Im, Pesaran and Shin W-stat (2003) tests are employed in this study. Table 3 indicates and summarizes these 2-unit root tests of the variables involved in the research.

Table 3
Unit Root Analysis

			Im, Pesaran and Shin W-stat		
Variables	Statistic	Prob.	Variables	Statistic	Prob.
At Level			**At Level**		
Oil Prices	1.438415	0.924842	Oil Prices	1.47286	0.9296
Interest Rates	-1.01505	0.155041	Interest Rates	-0.64726	0.2587
CPI	4.31073	1	CPI	0.89267	0.814
LSMI	-1.16302	0.1224	LSMI	-1.77226	0.0382
Market Capitalization	1.39383	0.9183	Market Capitalization	1.29382	0.9021
COVID-19	-3.68498	0.000114	COVID-19	-2.71918	0.0033
At first Difference			**At first Difference**		
Oil Prices	-6.01907	0	Oil Prices	-3.67288	0.0001
Interest Rates	-4.16461	0	Interest Rates	-1.78169	0.0374
CPI	-2.60115	0.0046	CPI	-2.17231	0.0149
LSMI	-7.01952	0	Market Capitalization	-4.3734	0
Market Capitalization	-5.91777	0			

Levin, Lin & Chu t* report that Covid-19 is the variable which is stationery at level, rest all variables including oil prices, interest rates, CPI, LSMI and market capitalization become stationary at first difference. Similarly, by using Im, Pesaran and Shin W-stat, LSMI and Covid-19 were stationary at level, rest all become stationary after taking the first difference.

Result of Hauseman Test

This particular test is used to choose the best and appropriate model from random and fixed models. According to redundant fixed effects tests, the cross section F p-value is 0.0718, and the Chi-square p-value is 0.059 both are greater than 5%. So fixed effect model isn't appropriate. Moreover, the cross section random p-value is 0.0664 i.e. greater than 5, random effect model is also not suitable for this research. So, simple pooled OLS model is the appropriate model.

Table 4
Unit Root Analysis

Effect Test	Statistics	Prob.
Cross-section F	2.199081	0.0718
Cross-section Chi Square	9.060948	0.0596

Table 5
Unit Root Analysis

Test Summary	Chi Square Statistics	Prob.
Cross-section Random	8.796323	0.0664

Results of Pooled OLS

Table 6 explains the results of the influence of macro-economic variables on to the stock returns of textile sectors of Pakistan, Bangladesh and Sri Lanka. The value of coefficient of Brent oil prices is negative and statistically significant means that any surge in global oil prices adversely affect the stock market performance of textile sectors.

Table 6
Pooled OLS Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	442.02	68902.29	0.642142	0.522849
Oil Prices	-618.5083	112.6464	5.490706	0.00030
XR	-253.929	290.8856	-0.87295	0.385632
CPI	33.3553	125.5967	-0.26557	0.791337
Interest Rates	210.5	98181.79	2.143926	0.035464
LSMI	145.1206	86.75992	1.672668	0.048794
Covid-19	-0.932922	0.452024	2.063876	0.042686
R-squared		0.746520		
Adjusted R-squared		0.725099		
F-Statistics		34.85022		
Prob. (F-Statistics)		0.000000		
Durbin-Watson Stat		1.765336		

The coefficient of exchange rates is also negative suggesting the inverse relationship between changes in currency rates and stock prices of textile companies of said companies, however, this relationship is not statistically significant during the period. This result of XR and SR in our study is in line with the previous studies; Aziz and Ibrahim (2003), Srivastava Agarwal and Srivastav (2010), Obwogi and Laichena (2015). The value of interest is positively significantly related to the market capitalization of textile companies in Pakistan, Bangladesh and Sri Lanka. Further, the consumer price index value is positively related to the market capitalization of the stock market performance of textile companies, the Probability value is statistically insignificant. The value of the large scale manufacturing index is positively related to the market capitalization, as industrial output grows, the market value of the companies also grows. Now, for the most vital variable, covid-19 turned out to be negative with the market capitalization of textile companies. Given the circumstances and since the outbreak of the novel coronavirus, it badly affected industrial output and market performance due to stringent covid-19 protocols and the closure of industries.

Conclusion

The major objective of the study was to investigate and assess the effects of macroeconomic factors on the stock market performance of Pakistan, Bangladesh, and Sri Lanka, three emerging and developing nations. Numerous other research examined this connection for either a set of developing or a set of developed economies, but no study has ever included a mixed sample of young, quickly developing economies. In this study, we made use of monthly data on macroeconomic factors, COVID-19, and the textile industries' stock market performance in the aforementioned nations. Our monthly data collection covers the months of December 2019 through January 2022. We used a Pooled OLS model to examine the relationship between macroeconomic factors and the stock market performance of the textile industries.

References

Awais, M., Ahmad, S. F., Riaz, P., & Ibrahim, M. (2021). Banking Sector Development, Inflation and Economic Growth of Pakistan: The Nexus. *Journal of Contemporary Issues in Business & Government*, *27*(5), 11-25.

Al-Mamun, M. (2013). The effect of macroeconomic & market specific dynamics on stock market development in global growth generator countries. *Asian Economic and Financial Review*, *3*(9), 1152-1169.

Baranidharan, S., & Vanitha, S. (2016). The effect of macroeconomic and financial related variables on stock market capitalization of global growth generator countries. *Journal of Contemporary Management Research*, *10*(1), 1.

Badullahewage, S. U., & Jayewardenepura, C. (2018). The effects of macroeconomic factors on the performance of stock market in Sri Lanka. *International Journal of Innovation and Economic Development*, *3*(6), 33-41.

Fernando, A. (2017). *Macroeconomic impact on stock market returns and volatility: Evidence from Sri Lanka*. SSRN 3238532.

Irshad, M., Hussain, M., & Baig, A. M. (2022). Macroeconomic Variables the Indicators for the Economic Growth of Pakistan. Pakistan Social Sciences Review, 6(II), 58-72. https://doi.org/10.35484/pssr.2022(6-ii)06

Irshad, M., Khan, M. A., Akhlaq, A., & Hussain, M. (2022). Strategies to Deregulate the Downstream Petroleum Sector of Pakistan. Journal of Economic Impact, 4(1), 122–131. https://doi.org/10.52223/jei4012214

Irshad, M., Qureshi, M. A., Saraih, U. N., & Ahmad, S. F. (2023). Impact of institutional climate on the student's engagement and learning outcomes in private sector universities of Karachi. International Journal of Management in Education, 17(3), 297. https://doi.org/10.1504/IJMIE.2023.130674

Khan, Mudassir Ali, Ahmad, S. F., & Irshad, M. (2022). Quantifying the mediating effect of resilience in supply chain: Empirical evidence from oil and lubricant industry. Journal of Development and Social Sciences, 3(II). doi:10.47205/jdss.2022(3-ii)21

Liu, X., Ahmad, S. F., Anser, M. K., Ke, J., Irshad, M., Ul-Haq, J., & Abbas, S. (2022). Cyber security threats: A never-ending challenge for e-commerce. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.927398

Mahmud, I., Fahad, H. A., & Rahman, A. N. (2021). The Nexus Between Firm Specific Factors, Macroeconomic Factors And Firm Performance Of Textile Sector Of Bangladesh. *Asian Finance & Banking Review*, *5*(1), 54-74

Rad, A. S. (2013). *The impact of oil prices on the stock returns of textile industry in BIST* (Doctoral dissertation, Eastern Mediterranean University (EMU)-Doğu Akdeniz Üniversitesi (DAÜ)).

Sayed Fayaz Ahmad, Heesup Han, Muhammad Mansoor Alam, (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education," Humanities and Social Sciences Communications 10(1), 1-14

Siddiqui, M. M., & Muhammad, N. (2014). Oil price fluctuation and stock market performance-the case of Pakistan. *Journal of International business and economics*, *2*(1), 47-53

Sarwar, S., Khalfaoui, R., Waheed, R., & Dastgerdi, H. G. (2019). Volatility spillovers and hedging: Evidence from Asian oil-importing countries. *Resources Policy*, *61*, 479-488.

Waliullah, W. (2010). Financial Liberalization And Stock Market Behaviour In An Emerging Market-A Case Study Of Pakistan. *International Journal of Business and Social Science*, *1*(3), 35-45

Waheed, R., Sarwar, S., Sarwar, S., & Khan, M. K. (2020). The impact of COVID-19 on Karachi stock exchange: Quantile-on-quantile approach using secondary and predicted data. *Journal of public affairs*, *20*(4), e2290.

Waheed, R., Wei, C., Sarwar, S., & Lv, Y. (2018). Impact of oil prices on firm stock return: industry-wise analysis. *Empirical Economics*, *55*(2), 765-780.

Yaseen, Z., Jathol, I. & Muzaffar, M. (2020). Covid-19 and its Impact on South Asia: A Case Study of Pakistan, *Global International Relations Review*, III(I), 20-26.