



THE IMPACT OF COVID-19 PANDEMIC ON THE STOCK MARKET PERFORMANCE: A STUDY ON DHAKA STOCK EXCHANGE (DSE)

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ABSTRACT

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The endemic of the COVID-19 pandemic caused by coronavirus has stroked everywhere of the world, including capital markets. This research intends to examine the effect of the COVID-19 pandemic on the performance of stock markets of Bangladesh. For this purpose, daily panel data from March 01, 2020, to June 27, 2021, a total number of 286 days' data have been used. The influence of Covid-19 on the DSE has been quantified by regression analysis using DSE indexes like DSEX and DSE30 as the dependent variables. Daily new confirmed cases and deaths of the world and Bangladesh, lockdown imposed in Bangladesh are used as the independent variables. Inflation rate, bank rate, interest rate of deposit, interest rate of loan and advance, exchange rate, and gold price are used as the control variables. The study found an alarming impact of the Covid-19 pandemic on the stock market indexes of DSE. The daily new confirmed cases of the world and Bangladesh, Bank rate, inflation rate, interest rate of deposit has a significant negative impact on the DSE indices, while the daily deaths in the world and Bangladesh, interest rate of loan and advance, and gold price has a significant positive relationship with DSE indices. This study also found that lockdown imposed in Bangladesh for controlling the Covid-19 is significant negatively related with DSEX index and significant positively related with DSE30 index. The recommendations will help the investors, policymakers, regulatory authority, and governments to make proper decisions for combating the pandemic crisis.

Contribution/Originality: This research is one of the few crucial pieces of research determining the impacts of the Covid-19 pandemic on the capital market in Bangladesh. This research is one of the fundamental researches of a developing country that uses the Covid-19 information of the world and Bangladesh.

1. INTRODUCTION

The disease Covid-19 caused by the novel coronavirus spread all over the world and created a world pandemic. This virus was first discovered in Wuhan, China, at the end of December 2019, which seriously injured the respiratory functions of human being, ranging from the common cold to more severe diseases like MARS, SARS. This virus is very much contaminated and spread person to person by close contact. On January 30, 2020, WHO professed Covid-19 as a public health emergency for all over the world and on March 11, 2020, it also

acknowledged a pandemic. The Covid-19 has spread 220 countries and territories all over the world. Up to June 27, 2021, 181.87 million people are infected, and 3.94 million people died due to the novel coronavirus. The world's economy is curved due to the shake of the Covid-19 pandemic, and severe economic, social and financial damage is facing many countries all over the world. To control the outbreak of Covid-19, many countries worldwide have taken several control activities like awareness people, ensuring proper using of masks and hand sanitizers, ensuring social distancing, imposing restriction on unnecessary gathering and travelling, avoiding social functions and finally undertaken several lockdown restrictions. Lockdown is an effective technique for reducing the rapid spread of Covid-19 (Perra, 2021) that can be used for a short period. Most of the world's countries declared lockdown for the whole country or a partial part several times. Bakhshi and Chaudhary (2020) argued that the lockdown of a country is facing enormous financial and economic losses. The global economic and financial activities are seriously affected by those restrictions. The pandemic created by Covid-19 affects the health sector and affects the economy seriously all over the world. According to Bahrini and Filfilan (2020) "the novel coronavirus has particularly affected financial markets all over the world." Most of the stock market indexes of the world, such as stock markets in America, Europe, Asia and Africa, have flopped down due to the Covid-19. "The prominent stock markets indexes of the USA, such as the Dow Jones Industrial Average (DJIA) and Standard & Poor's 500 Index (S&P500), have dropped significantly" (Wagner, 2020).

After identifying of first three infected patients in Bangladesh, Covid-19 has spread all over the country, and the number of infected new patients and deaths has increased day by day. For controlling the spreading of the Covid-19 pandemic government of Bangladesh imposed a complete lockdown throughout the country from March 23, 2020, to May 30, 2020. The government also took some initiatives like awareness people about the Covid-19, ensuring social distance, stopping the social function, ensuring proper use of masks and hand sanitizers, and ensuring isolation of suspected corona virus-infected people ensuring the test to identify Covid-19, travel and entry restrictions and so on. Due to impose those controlling activities, the spread of Covid-19 decreased in September 2020 and on February 07, 2021, the daily new confirmed cases came to 292 persons, and on March 03, 2021, the daily deaths due to Covid-19 came to five persons. This was the success of the Bangladesh government and the people. After that time, people are relaxing about the control activities taken by the government, which results in a huge spread of the coronavirus throughout the country. Recently government declared lockdown for the second time from April 05, 2021, which is continuing. Up to June 27, 2021, a considerable number of 8,88,406 people infected by the coronavirus, and we have lost 14,172 nearest and dearest people.

Most of the sectors of the economy of Bangladesh have affected by Covid-19 drastically. The tourism and hospitality sector is seriously affected by the control activities imposed by the government. All the tourist spots are remained closed due to the Covid-19 pandemic. Chowdhury, Khan, and Dhar (2021) projected that around ninety per cent of the activities of tourism and hospitality management businesses had been reduced. The educational institutions in Bangladesh are still closed since March 2020. Many business organizations reduced their employees and salaries. Many people lost their jobs and became unemployed. The Covid-19 negatively influenced the income-generating activities of the people, which lead to lessen the GDP of the world (Dhar, 2020; Fernandes, 2020; Ferrantino et al., 2020). Maliszewska, Mattoo, and Van Der Mensbrugge (2020) said that some people are bound to reduce consumption for losing income source or reducing income. Several shopping market, shopping malls, retail shops and micro business units were closed many times due to lockdown. The turnover of business organizations reduced significant portion due to Covid-19 pandemic. In these situations, it was very challenging to run the business smoothly, generate profit, and return to investors. Investors expect a high return from the investments. "The essential part of an investment is a positive rate of return" (Hossain, 2013), "whereas the potential investors and creditors always try to ensure getting back the original investment along with the return" (Hossain, 2020b). They always want to compensate accepted risks with the expected return. Sansa (2020) argued that singular shareholder willingness is strongly absolutely related to stock returns. According to Hossain (2021)

“When making investment decisions, investors want to ensure the ability and strength of the company to generate profit.” Before investing in stock, they want to know the ability and strength of the company. If the investors are not satisfied with the company's performance, they will switch to alternative investment opportunities. If most investors switched to alternative investment, the demand for the share would decrease, and finally, the stock market indexes will lessen. Liu, Manzoor, Wang, Zhang, and Manzoor (2020) concluded that the Covid-19 pandemic had upraised anxiety of investors' uncertainty. During the Covid-19 pandemic, the overall sentiment of the investors declined that generates lower yields on related stocks (Baig, Butt, Haroon, & Rizvi, 2020). The final result of this outbreak is the decelerate economy of the country either by the restrictions imposed by the government or by fear to the mind of people.

The stock market is the heart of the economy of the country. Most of the capital of the economy moves through the stock market. The impact of the stock market drastically influences the national economy of the country. After identifying the first three Covid-19 cases of Bangladesh, the general index of DSE has massively declined 6.51%, while the total capitalization of the market has shrinkage by 5.5%. Now time demands to control and manage the outbreak of the Covid-19 pandemic and ensures the sustainable stability of the economy. If not managed properly and efficiently, the outbreak of the Covid-19 pandemic may obliterate any economy (Anjorin, 2020).

1.1. Objectives of the Study

The main objective of this research is to find out the impact of Covid-19 on the DSE.

This study will attempt to accomplish the following specific objectives:

- i. To present the present scenario of Covid-19 in Bangladesh.
- ii. To present the present scenario of DSE.
- iii. To estimate the influence of Covid-19 (Daily infected and deaths) of Bangladesh on the different indices (DSEX, and DS30) of DSE.
- iv. To assess the effect of Covid-19 (Daily infected and deaths) of the world on the different indices (DSEX, and DS30) of DSE.
- v. To evaluate the impression of lockdown on the different indices (DSEX, and DS30) of DSE.
- vi. To assess the impact of other variables like inflation, bank rate, exchange rate, interest rate and gold price on the stock market performance.

2. LITERATURE REVIEW

The influence of Covid-19 pandemic on the capital market is significant for financial and economic growth and sustainable development in a country. From the several studies, we found that most of the pandemic cases negatively impact the economy due to increased disease-associated medical costs and disease-related mortality. Rabhi, Touati, and Haoudi (2020) stated that in the SARS outbreak of 2003, the stock markets of the seriously affected countries reacted more rapidly and strongly compared to others. Donadelli, KizysR., and Riedel (2017) argued that media coverage of pandemic information significantly impacts the companies' stock prices. Baker et al. (2020) found that in the US stock market Covid-19 pandemic has impacted powerfully than any other previous infectious disease outbreak. Hasan, Mahi, Sarker, and Amin (2021) concluded that the stock market performance is significantly negatively impacted by Covid-19 cases. Yilmazkuday (2020) in the US identified a substantial deleterious relationship between Covid-19 cases and stock market performance.

The Covid-19 coronavirus pandemic information like total coronavirus cases, total deaths, daily new cases and daily new death of the country and all over the world can be perceived negatively, positively or neutrally by the investors, potential investors and also the citizens of the country which can influence the market indices. Ashraf (2020) conducted a comprehensive analysis collected data from 64 countries about Covid-19 information like daily

new cases and deaths and stock exchange performance, concluded that stock markets are responded more quickly to the daily new cases relative to the new deaths.

Sansa (2020) examined Shanghai Stock Exchange (SSE) and DJIA for March 01 to March 25, 2020, and found a negative association between the COVID-19 cases and the financial markets' performance. Machmuddah, Utomo, Suhartono, Ali, and ghulam (2020) conducted research collecting data from ninety days before the Covid-19 pandemic and after ongoing ninety days closing stock price and volume of stock trade and marked a significant difference. They also suggested the investors choose the companies providing much-needed customer goods like drugs, foods and beverages.

Liew and Puah (2020) stated that the investors' reaction to the Covid-19 differs from country to country and industry to industry. They also said that some sectors like consumer items, information technology (IT), communication, infrastructure, medical non-manufacturing had performed better than other sectors. This result is also supported by Al-Awadhi, Alsaifi, Al-Awadhi, and Alhammadi (2020) that the information technology and pharmaceutical industries done better during the epidemic of Covid-19 than other industries and also noticed a significant negative association amid Covid-19 and the value of the share of the composite index of the Hang-Seng Stock Exchange and SSE. Baker et al. (2020) observed a significant negative connection amid the Covid-19 cases and Dow Jones Industrial Average index returns. They estimated that if 1% increase in the average daily COVID19 cases in the U.S. will lead to a nearly 0.01% decrease in the S&P 500 index after the first day and nearly 0.03% shrinkage after one month supported Yilmazkuday (2020).

Odhiambo, Weke, and Ngare (2020) concluded that since the attack of the coronavirus, the economy of Kenya has been facing GDP decline, increasing unemployment and other economic destruction. Kotishwar (2020) conducted research using VECM to estimate the effect of the covid-19 caused by a virus spread on the stock markets of six countries like the USA, Spain, France, Italy, China and India and found a substantial long-run adverse relationship of Covid-19 with the stock indices of selected countries. Karungu, Memba, and Muturi (2020) argued that at the Nairobi Stock Exchange of Kenya, most of the foreign investors started disposing of their investments from the stock market. In conducting comprehensive research on the stock exchanges of seven highly infected countries Zeren and Hizarci (2020) found that total and new cases by Covid-19 have a significant association with the performances of the regional capital market. Zhang, Hu, and Ji (2020) stated that the Covid-19 widespread has dramatically influenced the stock market worldwide. Chowdhury et al. (2021) observed that the Covid-19 pandemic has a profound negative influence on the stock market due to increased risks. Sun, Wu, Zeng, and Peng (2021) concluded that the region found more confirmed Covid-19 cases would suffer more and more losses because the companies' business activities would be weakened, and finally, the return of the stocks decreases. Ramelli and Wagner (2020) empirically investigated the different restrictions imposed by the government, like social distancing policies, several lockdown days, and international travel restrictions extremely negatively impacted the economy and stock market indices. However, Ozili and Arun (2020) found a different result than the growing quantity of affected covid-19 cases did not considerably affect economic events. McKibbin and Fernando (2020) concluded that the specific industry affected by the Covid-19, not the whole financial market index. Cookson, Engelberg, and Mullins (2020) in China found that the monetary markets continued strong and steady and did not affect by the Covid-19 pandemic, which is supported by Sansa (2020) and Xinhua (2020).

Severely imposed lockdown by different countries also shrink the economy. Ayithey, Matthew, Nyasha, Japhet, and Christian (2020) alarmed that the global GDP may reduce by 0.5% due to the several lockdowns imposed by the government. This reduction of GDP will increase depending on the duration of the lockdown. Many other researchers also found similar results in different countries, some of them in China (Ruiz & Arturo, 2020), Germany (Michelsen et al., 2020), the US (Alfaro, Anusha, Andrew, & Peter, 2020), and Saudi Arabia (Albulescu, 2020). The stock market performance will be influenced by this reduction of the country's GDP (Chaudhary, Bakhshi, & Gupta,

2020). Rabhi et al. (2020) found that throughout the pandemic, government interference has more impact on the economic uncertainty than Covid-19 cases.

The performance of the stock market also significantly influenced by some unavoidable variables like Inflation Rate (IR), Bank Rate (BR), Interest Rate of Deposit (IRD), Interest Rate of Loan and Advance (IRLA), Exchange Rate (ER), and Gold Price (GP). The inflation rate of a country represents the decline of the purchasing power of the country's currency. Azeez and Obalade (2019) found that IR does not significantly explain the stock market performance. Hossain (2020b) documented that annual inflation does not significantly interfere with the performance of firms. IRD is the rate of interest the deposit holders get by depositing in the banks or financial institutions. The IRLA is the rate the banks and financial institutions provide loans and advances to their clients. Ologunde, Elumilade, and Asaolu (2006) found that interest rate positively influences the stock market performance in Nigeria. The ER is the rate that is used to exchange foreign currency for a country's currency. Ibrahim and Azeez and Obalade (2019) documented a significant negative relationship between exchange rate and stock market performance in Malaysia. Areli Bermudez Delgado, Bermudez Delgado, and Saucedo (2018) found an inverse relationship of ER with stock market performance in Mexico. Mun (2007) documented that there is a significant correlation between ER fluctuations and local stock market volatility.

Jahur, Quadir, and Khan (2014) found that inflation rate and interest rate are significantly negatively related and the exchange rate is significantly positively associated with stock market performance in Bangladesh. As a valuable metal, gold is treated as jeweler, medium of exchange, and medium of investments. Therefore, investors consider gold as an excellent substitute investment of stocks. Gokmenoglu and Fazlollahi (2015) and Arouri, Lahiani, and Nguyen (2015) identified that gold piece has a significant inverse impact in the stock market. Jain and Biswal (2016) have found that gold price reduction pursue a downward movement of the stock market's benchmark index. Raza, Shahzad, Tiwari, and Shahbaz (2016) documented a mixed result in the large rising economies GP positively explaining the stock prices, but in tiny rising economies, GP negatively explains the stock price.

3. METHODOLOGY

3.1. Variables and Data Collection:

For measuring the effect of different Covid-19 variables are used as Daily New Confirmed Cases in Bangladesh (DNCCBD), Daily Death in Bangladesh (DDBD), Daily New Confirmed Cases of the World (DNCCW), Daily Death of the World (DDW), and Lockdown imposed in Bangladesh (LBD). Here lockdown is used as the dummy variable where no lockdown set in the country equal to zero and lockdown imposed in the government equal to one used. In addition, Inflation Rate (IR), Bank Rate (BR), Interest Rate of Deposit (IRD), Interest Rate of Loan and Advance (IRLA), Exchange Rate (ER), and Gold Price (GP) are used as the control variables.

In this study, required data are collected from the daily stock price indices of the leading two indices (DSEX and DSE30) of DSE from March 01, 2020, to June 27, 2021. DSE is selected for the data collection because market capitalization accounts for around nine per cent of the nominal GDP through DSE in Bangladesh. The DSEX stands for Dhaka Stock Exchange Broader Index, and DSE30 denotes for Dhaka Stock Exchange Index of prominent thirty companies. Based on profitability, market capitalizations and transactions, DSE discloses the list of the companies of the DSE30 index every three months. The indices DSEX and DSE30 will be used as the dependent variable for measuring the influence of Covid-19 on the stock exchange in Bangladesh. From March 01, 2020, to June 27, 2021, the panel data is selected because the Covid-19 first cases identified in Bangladesh on March 08, 2020. In March 2020, Covid-19 speeded worldwide, and WHO professed Covid-19 as a world pandemic. Therefore, only the working days of DSE, 286 days of data, were collected and used in this research. Table 1 shows detail about the variables used in this study.

Table-1. Details of Variables

| Dependent Variable | |
|--------------------------|--|
| Stock Market Performance | DSEX |
| | DSE30 |
| Independent Variables | |
| Covid-19 variables | Daily New Confirmed Cases in Bangladesh (DNCCBD) |
| | Daily Death in Bangladesh (DDBD) |
| | Daily New Confirmed Cases of the World (DNCCW) |
| | Daily Death of the World (DDW) |
| | Lockdown imposed in Bangladesh (LBD) |
| Control Variables | |
| Economic factors | Inflation Rate (IR) |
| | Interest Rate of Deposit (IRD) |
| | Interest Rate of Loan and Advance (IRLA) |
| | Bank rate (BR) |
| | Exchange Rate (ER) |
| | Gold Price (GP) |

3.2. Hypotheses

For measuring the effect of Covid-19 in the stock market in Bangladesh following hypotheses will be tested:

- i. H_{01} : There is a significant negative relationship between the daily new confirmed cases by Covid-19 in the world and the DSE indices.
- ii. H_{02} : There is a significant negative relationship between the daily deaths by Covid-19 in the world and the DSE indices.
- iii. H_{03} : There is a significant negative relationship between the daily new confirm cases of Covid-19 in Bangladesh and the DSE indices.
- iv. H_{04} : There is a significant negative relationship between the daily deaths by Covid-19 in Bangladesh and the DSE indices.
- v. H_{05} : There is a significant negative relationship between the lockdown imposed in Bangladesh and the DSE indices.
- vi. H_{06} : There is a significant negative relationship between inflation rate and the DSE indices.
- vii. H_{07} : There is a significant negative relationship between bank rate and the DSE indices.
- viii. H_{08} : There is a significant negative relationship between interest rate of deposit and the DSE indices.
- ix. H_{09} : There is a significant negative relationship between interest rate of loan and advances and the DSE indices.
- x. H_{10} : There is a significant negative relationship between exchange rate and the DSE indices.
- xi. H_{11} : There is a significant negative relationship between gold price and the DSE indices.

3.3. Estimation Techniques

The different statistical result was generated using SPSS software such as descriptive statistics, correlation, and regression analysis for conducting this study. "Descriptive statistics are used to judge the importance of the variables used and correlation and regression analysis are used to judge the impact of dependent and independent variables" (Hossain, 2020b).

3.4. Conceptual Framework and Model Specification

The Figure 1 shows the conceptual framework for this study where five independent variables along with six control variables interfere the dependent variables.

The DSE indices DSEX and DSE30 are the model of five Covid-19 related variables like DNCCBD, DDBD, DNCCW, DDW, and LBD and six control variables like IR, BR, IRD, IRLA, ER, and GP. For estimating the effects of Covid-19 on the DSE following OLS regression models and equations are formulated:

$$\text{Model 1: } DSEX_{it} = \beta_0 + \beta_1 DNCCBD_{it} + \beta_2 DDBD_{it} + \beta_3 DNCCW_{it} + \beta_4 DDW_{it} + \beta_5 LBD_{it} + \beta_6 IR_{it} + \beta_7 BR_{it} + \beta_8 ER_{it} + \beta_9 IRD_{it} + \beta_{10} IRLA_{it} + \beta_{11} GP_{it} + \epsilon_{it}$$

$$\text{Model 2: DSE30it} = \beta_0 + \beta_1 \text{DNCCBDit} + \beta_2 \text{DDBDit} + \beta_3 \text{DNCCWit} + \beta_4 \text{DDWit} + \beta_5 \text{LBDit} + \beta_6 \text{IRit} + \beta_7 \text{BRit} + \beta_8 \text{ERit} + \beta_9 \text{IRDit} + \beta_{10} \text{IRLAit} + \beta_{11} \text{GPit} + \epsilon \text{it}$$

Where DSEX stands for Dhaka Stock Exchange Broader Index, DSE30 stands for Dhaka Stock Exchange 30 Index, which is formed by 30 leading companies listed in DSE, “ε stands for error term of the model and β₀, β₁, β₂, β₃, β₄, β₅, β₆, β₇, β₈, β₉, β₁₀, and β₁₁ stands for the coefficients of the regression model” (Hossain, 2020a). The subscript i signify each variable, and t means days.

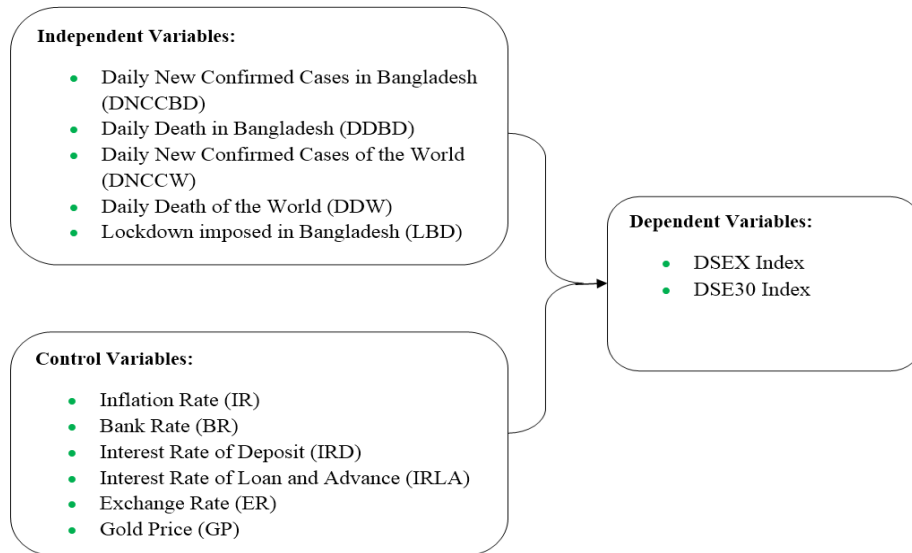


Figure-1. Conceptual Framework.

4. ANALYSIS

4.1. Descriptive Statistics

Descriptive analysis shows the mean and standard deviation.

Table-2. Descriptive Statistics.

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | Kurtosis |
|--------|-----|---------|---------|-----------|----------------|----------|----------|
| DSEX | 286 | 3603.95 | 6125.41 | 5025.38 | 643.70 | -0.296 | -0.910 |
| DSE30 | 286 | 1203.43 | 2236.77 | 1801.97 | 309.06 | -0.184 | -1.329 |
| DNCCW | 286 | 2610 | 904790 | 405264.90 | 213857.92 | 0.158 | -0.639 |
| DDW | 286 | 67 | 17347 | 8099.50 | 3921.28 | 0.240 | -0.479 |
| DNCCBD | 286 | 0 | 7626 | 2061.13 | 1488.41 | 1.192 | 1.956 |
| DDBD | 286 | 0 | 119 | 33.22 | 21.69 | 1.143 | 2.003 |
| LBD | 286 | 0.00 | 1.00 | 0.1294 | 0.3362 | 2.220 | 2.951 |
| ER | 228 | 84.060 | 84.940 | 84.56 | 0.168530 | -0.563 | 0.025 |
| GP | 227 | 1469.80 | 2063.19 | 1827.05 | 98.69 | -0.693 | 1.012 |
| IR | 286 | 5.02 | 6.44 | 5.56 | 0.3568 | 0.936 | 0.416 |
| BR | 286 | 4.00 | 5.00 | 4.14 | 0.3545 | 2.006 | 2.038 |
| IRD | 286 | 4.300 | 5.510 | 4.68 | 0.3330 | 0.892 | 0.103 |
| IRLA | 286 | 7.33 | 9.58 | 7.74 | 0.5247 | 2.794 | 7.314 |

Table 2 represents the clear picture of different variables used in this research of 286 days values of dependent and independent variables. From Table 2, it is found that the mean of DSEX is 5025.38, and the standard deviation is 643.70. It means the average DSE broader index was 5025.38 in this research period. The highest value of the DSEX index was 6125.41, and the lowest value was 3603.95 in this period. The table also established that DSE30

has a mean value of 1801.97 and a standard deviation value of 309.06. It means the average DSE30 index was 1801.97 in this research period, with a maximum value of 2236.77 and a minimum value of 1203.43 in this period. The mean of DNCCW was 405264.90 with a standard deviation of 213857.92. It implies that each day an average of at least 405265 people in the world are newly confirmed corona virus-positive. In a single day maximum of 9,04,790 people were affected across the globe. It is alarming that huge average numbers of people are affected by Covid-19 daily all over the world. The mean of DNDW is 8099.50, and a standard deviation of 3921.28 implies that every day an average 8099 people died due to Covid-19 all over the world. In a single day maximum of 17347 people were died due to Covid-19 across the globe. We have lost huge nearest and dearest people because of the Covid-19 pandemic. It is also located that DNCCBD has a mean of 2061.13 and a standard deviation of 1488.41. A maximum of 7,626 people affected by Covid-19 in a single day in Bangladesh. It can be concluded that after identifying the first cases of Covid-19 on March 08, 2020, an average each day, at least 2061 people became corona virus-positive. The mean and standard deviation of DDBD is 33.22 and 21.69, respectively. From this, it can be said that each day on average, we have lost at least 33 nearest and dearest people in Bangladesh due to Covid-19. A maximum of 119 people has died in a single day in Bangladesh. The mean 0.1294 and standard deviation of 0.3362 of LBD represent the dummy variable lockdown imposed in Bangladesh. In this research period, most of the days, the lockdown was not set in Bangladesh.

The mean and standard deviation of ER is 84.56, and .1685 respectively, represent the exchange rate for one US dollar was 84.56 Bangladesh Taka. The height and lowest ER were 84.94 and 84.06. The mean, standard deviation, the maximum and minimum value of GP were 1827.05, 98.69, 2063.19 and 1469.80, respectively. The average per ounce gold price was 1827.05 USD in this research period. The average inflation rate was 5.56 per cent with a standard deviation of 0.3568. In this period, the average bank rate was 4.14 per cent with a standard deviation of 0.3545. The mean interest rate of deposit was 4.68 per cent, and the interest rate of loan and advance was 7.74 per cent with a standard deviation of 0.333 and 0.5247, respectively.

4.2. Correlations Analysis

Table 3 represents the correlation among different variables used in this study. It is shown that the dependent variable DSEX is positively related with the independent and control variable DNCCW, DDW, DDBD, LBD, and GP while negatively related with DNCCBD, ER, IR, BR, IRD, and IRLA. The positive relationship of DNCCW, DDW, DDBD, LBD, and GP with DSEX indicate that the world Covid-19 new confirmed cases of the world, daily death of the world and Bangladesh, lockdown and gold price positively related with the DSE broader index. The negative relationship of DNCCBD, ER, IR, BR, IRD, and IRLA with DSEX is very alarming for the stock market in Bangladesh. Here the relationship of ER, IR, BR, IRD, and IRLA with DSEX is significantly negative, and the relationship of DNCCBD with DSEX is not significant but negative. The negative impacts of Covid-19 on the microeconomic factors like ER, IR, BR, IRD, and IRLA drastically influence the DSEX index.

Table 3 also shows that DSE30 is significantly positively related to DNCCW, DDW, DDBD, LBD, and GP. Table 3 again shows that DSE30 is negatively related to DNCCBD, ER, IR, BR, IRD and IRLA. The relationship of DNCCW, DDW, DDBD, LBD, ER, GP, IR, BR, IRD, IRLA with DSE30 is significant, and the relationship of DNCCBD with DSE30 is not significant.

Table-3. Correlations Results.

| | DSEX | DSE30 | DNCCW | DDW | DNCCBD | DDBD | LBD | ER | GP | IR | BR | IRD | IRLA |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|---------|----------|---------|---------|---------|------|
| DSEX Sig. (2-tailed) | 1 | | | | | | | | | | | | |
| DSE30 Sig. (2-tailed) | 0.982** | 1 | | | | | | | | | | | |
| | 0.000 | | | | | | | | | | | | |
| DNCCW Sig. (2-tailed) | 0.648** | 0.674** | 1 | | | | | | | | | | |
| | 0.000 | 0.000 | | | | | | | | | | | |
| DDW Sig. (2-tailed) | 0.683** | 0.719** | 0.882** | 1 | | | | | | | | | |
| | 0.000 | 0.000 | 0.000 | | | | | | | | | | |
| DNCCBD Sig. (2-tailed) | -0.087 | -0.074 | 0.140* | 0.041 | 1 | | | | | | | | |
| | 0.140 | 0.209 | 0.018 | 0.494 | | | | | | | | | |
| DDBD Sig. (2-tailed) | 0.128* | 0.135* | 0.319** | 0.199** | 0.768** | 1 | | | | | | | |
| | 0.030 | 0.022 | 0.000 | 0.001 | 0.000 | | | | | | | | |
| LBD Sig. (2-tailed) | 0.259** | 0.325** | 0.472** | 0.366** | 0.261** | 0.490** | 1 | | | | | | |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | | | | | | |
| ER Sig. (2-tailed) | -0.442** | -0.444** | -0.486** | -0.489** | 0.086 | 0.087 | -0.024 | 1 | | | | | |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.194 | 0.189 | 0.714 | | | | | | |
| GP Sig. (2-tailed) | 0.223** | 0.126 | 0.220** | 0.206** | -0.020 | 0.107 | -0.100 | -0.119 | 1 | | | | |
| | 0.001 | 0.058 | 0.001 | 0.002 | 0.763 | 0.108 | 0.132 | 0.074 | | | | | |
| IR Sig. (2-tailed) | -0.485** | -0.529** | -0.385** | -0.529** | 0.178** | 0.054 | -0.163** | 0.380** | 0.145* | 1 | | | |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 | 0.364 | 0.006 | 0.000 | 0.029 | | | | |
| BR Sig. (2-tailed) | -0.639** | -0.607** | -0.619** | -0.544** | -0.075 | -0.213** | -0.101 | 0.395** | -0.630** | 0.207** | 1 | | |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.205 | 0.000 | 0.088 | 0.000 | 0.000 | 0.000 | | | |
| IRD Sig. (2-tailed) | -0.887** | -0.900** | -0.781** | -0.766** | -0.169** | -0.317** | -0.333** | 0.467** | -0.252** | 0.363** | 0.724** | 1 | |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| IRLA Sig. (2-tailed) | -0.638** | -0.641** | -0.653** | -0.652** | -0.336** | -0.426** | -0.206** | 0.339** | -0.499** | 0.111 | 0.754** | 0.874** | 1 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.060 | 0.000 | 0.000 | |

Note:

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4.3. Regression Analysis

The OLS regression analysis has been used to test the hypotheses in this study. Here DSEX and DSE30 are used as the dependent variable separately, where IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, and IRD are used as the independent variables for estimating the impact of the Covid-19 pandemic on the performance of DSE. “The positive or negative value of the beta coefficient of different independent variables indicates the variable's magnitude on the dependent variable” (Hossain, 2020b). “The P-value statistic pointed out the significant level of each dependent variable where R-squared and adjusted R-square values indicate the ability of independent variables to explain the dependent variable in the regression model” (Hossain, 2020b).

Table-4. Model summary for dependent variable DSEX.

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|--------------------|----------|-------------------|----------------------------|---------------|
| 1 | 0.963 ^a | 0.927 | 0.924 | 177.06611 | 0.521 |

a. Predictors: (Constant), IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, IRD
b. Dependent Variable: DSEX

Table-5. ANOVA for Dependent Variable DSEX.

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|--------------------|
| 1 | Regression | 109500768.101 | 11 | 9954615.282 | 317.507 | 0.000 ^a |
| | Residual | 8590560.045 | 274 | 31352.409 | | |
| | Total | 118091328.146 | 285 | | | |

Note:

a. Predictors: (Constant), IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, IRD.

b. Dependent Variable: DSEX.

Table-6. Coefficients for Dependent Variable DSEX.

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|---------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2580.264 | 7086.383 | | 0.364 | 0.716 |
| | DNCCW | 0.000 | 0.000 | -0.313 | -7.052 | 0.000 |
| | DDW | 0.028 | 0.007 | 0.169 | 3.783 | 0.000 |
| | DNCCBD | -0.059 | 0.012 | -0.137 | -4.827 | 0.000 |
| | DDBD | 3.327 | 0.911 | 0.112 | 3.651 | 0.000 |
| | LBD | -77.851 | 43.126 | -0.041 | -1.805 | 0.072 |
| | ER | 100.300 | 83.768 | 0.023 | 1.197 | 0.232 |
| | GP | 1.138 | 0.171 | 0.155 | 6.673 | 0.000 |
| | IR | -51.476 | 42.426 | -0.029 | -1.213 | 0.226 |
| | BR | -151.493 | 57.866 | -0.083 | -2.618 | 0.009 |
| | IRD | -3045.067 | 100.024 | -1.575 | -30.443 | 0.000 |
| IRLA | 936.917 | 64.665 | 0.764 | 14.489 | 0.000 | |

Note:

a. Dependent Variable: DSEX.

Table 4 shows the R-squared value of 0.927, which means the independent variables used to measure the impact of Covid-19 have explained 92.7% of the dependent variable DSEX. The value 0.521 Durbin-Watson statistic indicates the implausibility of autocorrelation (Hossain, 2020b), which means regression analysis can measure the impacts of independent variables on the dependent variable.

From Table 5, the F value 317.507 is found statistically significant at a 1% significance level with df 11 and a p-value of 0.00. So the null hypothesis is rejected while the alternative hypothesis dependent variable is significantly

related with independent variables is accepted. So it is found that DSEX is significantly related to IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, IRD.

The statistics of regression analysis for the dependent variable DSEX are presented in Table 6. "These coefficients describe the magnitude of each independent variable to uphold the dependent variable" (Hossain, 2020b). The value of beta coefficient -0.313 of DNCCW with a p-value of 0.000 is statistically significant at a 1% significant level. The null hypothesis H_{01} , the daily new confirmed cases in the world that negatively impacts the DSEX index, is accepted. The World new confirmed cases negatively influence the DSE broader index. The value of beta coefficient 0.169 of DDW with a p-value of 0.000 is statistically significant at a 1% significant level. The null hypothesis H_{02} , the daily death caused by Covid-19 in the world that has a significant negative impact on the DSEX index, is rejected. The World daily deaths due to Covid-19 do not negatively influence the DSE broader index.

The value of beta coefficient -0.137 of DNCCBD with a p-value of 0.000 is statistically significant at a 1% significant level. The null hypothesis H_{03} , the daily new confirmed cases in Bangladesh, has a significant negative impact on the DSEX index, which is accepted supported by Ashraf (2020); Sun et al. (2021); Zeren and Hizarci (2020) but varying with the findings of Ozili and Arun (2020). The DSEX index gradually decreases due to the increases of daily new Covid-19 confirmed cases in Bangladesh. The value of beta coefficient 0.112 of DDBD with a p-value of 0.000 is statistically significant at a 5% significant level, which means daily death in Bangladesh due to the Covid-19 significant do not negative impact on the DSE broader index. The null hypothesis H_{04} , the daily death caused by Covid-19 in Bangladesh, has a significant negative impact on the DSEX index is rejected varying by Ashraf (2020). From the statistics of DNCCBD, it can be argued that the daily new confirmed cases by Covid-19 drastically influence the DSEX index and this result is supported by Baker et al. (2020); Hasan et al. (2021); (Yilmazkuday, 2020); Ashraf (2020); Sansa (2020); Kotishwar (2020); Zeren and Hizarci (2020); Zhang et al. (2020); Chowdhury et al. (2021); Sun et al. (2021) but varying McKibbin and Fernando (2020); Ozili and Arun (2020); Cookson et al. (2020); Sansa (2020); Xinhua. (2020).

The value of beta coefficient -0.041 of LBD with a p-value of 0.072 is statistically significant at a 10% significant level, and the negative beta coefficient implies that the lockdown time increase DSEX index will automatically decrease.

The null hypothesis H_{05} , the lockdown imposed by the government because of Covid-19 in Bangladesh, has a significant negative impact on the DSEX index, which is accepted and the result is supported Ramelli and Wagner (2020). The relationship between lockdown and DSEX is significantly negative. The value of beta coefficient -0.029 of IR with a p-value of 0.226 is statistically insignificant at a 10% significant level, and the negative beta coefficient implies that the inflation rate and the DSEX index are negatively related supporting the findings of Azeez and Obalade (2019) but varying Jahur et al. (2014). The null hypothesis H_{06} , the exchange rate, has a significant negative impact on the DSEX index is rejected.

The value of beta coefficient -0.083 of BR with a p-value of 0.009 is statistically significant at a 1% significant level, and the negative beta coefficient implies that the bank rate and the DSEX index are significantly negatively related. The null hypothesis H_{07} , the bank rate, has a significant negative impact on the DSEX index is accepted. The value of beta coefficient -1.575 of IRD with a p-value of 0.000 is statistically significant at a 1% significant level, and the negative beta coefficient implies that the interest rate of deposit and the DSEX index are significantly negatively related.

The null hypothesis H_{08} , the interest rate of deposit, has a significant negative impact on the DSEX index is accepted. The value of beta coefficient 0.764 of IRLA with a p-value of 0.000 is statistically significant at a 1% significant level, and the positive beta coefficient implies that the interest rate of loan and advances and the DSEX index are significantly positively related. The null hypothesis H_{09} , the interest rate of loan and advances, has a significant negative impact on the DSEX index is rejected.

The value of beta coefficient 0.023 of ER with a p-value of 0.232 is statistically not significant at a 10% significant level, and the positive beta coefficient implies that the exchange rate increases positively influence the DSEX index varying the results of Ibrahim and Aziz (2003), Mun (2007) and Jahur et al. (2014) . The null hypothesis H₁₀, the exchange rate, has a significant negative impact on the DSEX index is rejected. The value of beta coefficient 0.155 of GP with a p-value of 0.000 is statistically significant at a 1% significant level, and the positive beta coefficient implies that the gold price and the DSEX index are significantly positively related supporting the results of Jain and Biswal (2016) and varying Gokmenoglu and Fazlollahi (2015) and Arouri et al. (2015). The null hypothesis H₁₁, the gold price, has a significant negative impact on the DSEX index is rejected. The following regression model can be formed from Table 6.

$$\text{Model 1: DSEXit} = 2580.26 - 0.313\text{DNCCWit} + 0.169\text{DDWit} - 0.137\text{DNCCBDit} + 0.112\text{DDBDit} - 0.041\text{LBDit} - 0.083\text{BRit} - 1.575\text{IRDit} + 0.764\text{IRLAit} + 0.155\text{GPit} + \epsilon_{it}$$

Table-7. Model Summary for Dependent Variable DSE30.

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|--------------------|----------|-------------------|----------------------------|---------------|
| 2 | 0.969 ^a | 0.939 | 0.937 | 77.80897 | 0.297 |

a. Predictors: (Constant), IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, IRD
b. Dependent Variable: DSE30

Table-8. ANOVA for Dependent Variable DSE30.

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|---------|--------------------|
| 1 | Regression | 25564483.547 | 11 | 2324043.959 | 383.871 | 0.000 ^a |
| | Residual | 1658860.415 | 274 | 6054.235 | | |
| | Total | 27223343.962 | 285 | | | |

a. Predictors: (Constant), IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, IRD
b. Dependent Variable: DSE30

Table-9. Coefficients for Dependent Variable DSE30.

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|---------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1555.679 | 3114.001 | | 0.500 | 0.618 |
| | DNCCW | 0.000 | 0.000 | -0.315 | -7.747 | 0.000 |
| | DDW | 0.015 | 0.003 | 0.195 | 4.781 | 0.000 |
| | DNCCBD | -0.027 | 0.005 | -0.132 | -5.095 | 0.000 |
| | DDBD | 0.829 | 0.400 | 0.058 | 2.071 | 0.039 |
| | LBD | 38.387 | 18.951 | 0.042 | 2.026 | 0.044 |
| | ER | 48.938 | 36.811 | 0.024 | 1.329 | 0.185 |
| | GP | 0.160 | 0.075 | 0.045 | 2.134 | 0.034 |
| | IR | -59.246 | 18.644 | -0.068 | -3.178 | 0.002 |
| | BR | -62.050 | 25.428 | -0.071 | -2.440 | 0.015 |
| | IRD | -1320.100 | 43.954 | -1.422 | -30.034 | 0.000 |
| IRLA | 345.555 | 28.416 | 0.587 | 12.161 | 0.000 | |

a. Dependent Variable: DSE30

Table 7 shows the R-squared value of 0.939, which means the independent variables used to measure the impact of Covid-19 have explained 93.9% of the dependent variable DSE30. The value 0.297 Durbin-Watson statistic indicates the implausibility of autocorrelation (Hossain, 2020b) that means regression analysis can be used to measure the impacts of independent variables on the dependent variable DSE30.

Table 8, the F value 383.871 is statistically significant at a 1% significance level with df1 1 and a p-value of 0.00. So the null hypothesis dependent variable is not significantly related with independent variables is rejected. So it is found that DSE30 is significantly related to IRLA, IR, LBD, ER, DNCCBD, GP, DNCCW, BR, DDBD, DDW, and IRD.

The figures of regression analysis for the dependent variable DSE30 are presented in Table 9. "These coefficients are used to judge the magnitude of each independent variable to support the dependent variable" (Hossain, 2020b). The value of beta coefficient -0.351 of DNCCW with a p-value of 0.000 is statistically significant at a 1% significant level. The null hypothesis H_{01} , the daily new confirmed cases in the world that significantly negatively impacts the DSE30 index, is accepted. The World new confirmed cases significantly negatively influence the DSE30 index. The value of beta coefficient 0.159 of DDW with a p-value of 0.000 is statistically significant at a 1% significant level. The null hypothesis H_{02} , the daily death caused by Covid-19 in the world that has a significant negative impact on the DSE30 index, is rejected.

The value of beta coefficient -0.132 of DNCCBD with a p-value of 0.000 is statistically significant at a 1% significant level that means daily new confirmed cases of Covid-19 in Bangladesh significantly negatively impact the DSE30 index. The null hypothesis H_{03} the daily new confirmed cases in Bangladesh has a significant negative impact on the DSE30 index is accepted supported by Ashraf (2020); Sun et al. (2021); Zeren and Hizarci (2020) but varying with the findings of Ozili and Arun (2020). The value of beta coefficient 0.058 of DDBD with a p-value of 0.039 is statistically significant at a 5% significant level. The null hypothesis H_{04} , the daily death caused by Covid-19 in Bangladesh, has a significant negative impact on the DSE30 index is rejected varying by Ashraf (2020). From the statistics of DNCCBD it can be argued that the daily new confirmed cases of Covid-19 drastically influence the DSE30 index and this result is identical to the findings of Baker et al. (2020); Hasan et al. (2021); Yilmazkuday (2020); Ashraf (2020); Sansa (2020); Kotishwar (2020); Zeren and Hizarci (2020); Zhang et al. (2020); Chowdhury et al. (2021); Sun et al. (2021) but varying McKibbin and Fernando (2020); Ozili and Arun (2020); Cookson et al. (2020); Sansa (2020); Xinhua. (2020).

The value of beta coefficient 0.042 of LBD with a p-value of 0.044 is statistically significant at a 5% significant level that means lockdown imposed by the government do not impact the DSE30 index. The null hypothesis H_{05} , the lockdown imposed by the government because of Covid-19 in Bangladesh, has a significant negative impact on the DSE30 index is rejected and the result is not identical to the findings of Ramelli and Wagner (2020). The value of beta coefficient -0.068 of IR with a p-value of 0.002 is statistically significant at a 1% significant level, and the negative beta coefficient implies that the inflation rate and the DSE30 index are significantly negatively related varying the findings of Azeez and Obalade (2019) but supporting Jahur et al. (2014). The null hypothesis H_{06} , the exchange rate, has a significant negative impact on the DSE30 index is accepted.

The value of beta coefficient -0.071 of BR with a p-value of 0.015 is statistically significant at a 5% significant level, and the negative beta coefficient implies that the bank rate and the DSE30 index are significantly negatively related. The null hypothesis H_{07} , the bank rate, has a significant negative impact on the DSE30 index is accepted. The value of beta coefficient -1.422 of IRD with a p-value of 0.000 is statistically significant at a 1% significant level, and the negative beta coefficient implies that the interest rate of deposit and the DSE30 index are significantly negatively related. The null hypothesis H_{08} , the interest rate of deposit, has a significant negative impact on the DSE30 index is accepted.

The value of beta coefficient 0.587 of IRLA with a p-value of 0.000 is statistically significant at a 1% significant level, and the positive beta coefficient implies that the interest rate of loan and advances and the DSE30 index are significantly positively related. The null hypothesis H_{09} , the interest rate of loan and advances, has a significant negative impact on the DSE30 index is rejected. The value of beta coefficient $.024$ of ER with a p-value of 0.185 is statistically insignificant at a 10% significant level, and the positive beta coefficient implies that the exchange rate increases positively influence the DSE30 index varying the results of Ibrahim and Aziz (2003), Mun (2007) and

Jahur et al. (2014). The null hypothesis H_{10} , the exchange rate, has a significant negative impact on the DSEX index is rejected.

The value of beta coefficient 0.045 of GP with a p-value of 0.034 is statistically significant at a 5% significant level, and the positive beta coefficient implies that the gold price and the DSE30 index are significantly positively related supporting the results of Jain and Biswal (2016) and varying Gokmenoglu and Fazlollahi (2015) and Arouri et al. (2015). The null hypothesis H_{11} , the gold price, has a significant negative impact on the DSEX index is rejected.

The following regression model can be formed from Table 9.

$$\text{Model 2: } DSE30_{it} = 1555.68 - 0.315DNCCW_{it} + 0.195DDW_{it} - 0.132DNCCBD_{it} + 0.058DDBD_{it} + 0.042LBD_{it} - 0.071BR_{it} - 1.422IRD_{it} + 0.587IRL_{it} + 0.045GP_{it} + \epsilon_{it}$$

4.4. Summary of Hypotheses Tests

Table 10 shows the summary of hypothesis tests conducted in this study.

Table-10. Summary of hypotheses tests.

| Hypotheses | Dependent Variable | Beta Coefficients | P-Value | Decision | Justification |
|---|--------------------|-------------------|---------|----------|--|
| H ₀₁ : There is a significant negative relationship between the daily new confirmed cases by Covid-19 in the world and the DSE indices. | DSEX | -0.313 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative and there is a 31.3% negative impact of DNCCW on the DSEX. |
| | DSE30 | -0.315 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 31.5% negative impact of DNCCW on the DSE30. |
| H ₀₂ : There is a significant negative relationship between the daily deaths by Covid-19 in the world and the DSE indices. | DSEX | 0.169 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 16.9% positive impact of DDW on the DSEX. |
| | DSE30 | 0.195 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 19.5% positive impact of DDW on the DSE30. |
| H ₀₃ : There is a significant negative relationship between the daily new confirm cases of Covid-19 in Bangladesh and the DSE indices. | DSEX | -0.137 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 0.137 times negative impact of DNCCBD on the DSEX. |
| | DSE30 | -0.132 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 0.132 times negative impact of DNCCBD on the DSE30. |
| H ₀₄ : There is a significant negative relationship between the daily deaths by Covid-19 in Bangladesh and the DSE indices. | DSEX | 0.112 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 0.112 times positive impact of DDBD on the DSEX. |
| | DSE30 | 0.058 | 0.039 | Rejected | P-value is significant at 95% confidence level but the beta coefficient is positive and there is a 0.058 times positive impact of DDBD on the DSE30. |
| H ₀₅ : There is a significant negative relationship between the lockdown imposed in Bangladesh and the DSE indices. | DSEX | -0.041 | 0.072 | Accepted | P-value is significant at 95% confidence level and the beta coefficient is negative. There is a 0.041 times negative impact of LBD on the DSEX. |
| | DSE30 | 0.042 | 0.044 | Rejected | P-value is significant at 95% confidence level and the beta coefficient is positive. There is a 0.042 times positive impact of LBD on the DSE30. |

| | | | | | |
|---|-------|--------|-------|----------|--|
| H ₀₆ : There is a significant negative relationship between inflation rate and the DSE indices. | DSEX | -0.029 | 0.226 | Rejected | P-value is not significant at 90% confidence level but the beta coefficient is negative. |
| | DSE30 | -0.068 | 0.002 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 0.068 times negative impact of IR on the DSE30. |
| H ₀₇ : There is a significant negative relationship between bank rate and the DSE indices. | DSEX | -0.083 | 0.009 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 0.083 times negative impact of BR on the DSEX. |
| | DSE30 | -0.071 | 0.015 | Accepted | P-value is significant at 95% confidence level and the beta coefficient is negative. There is a 0.071 times negative impact of BR on the DSE30. |
| H ₀₈ : There is a significant negative relationship between interest rate of deposit and the DSE indices. | DSEX | -1.575 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 1.575 times negative impact of IRD on the DSEX. |
| | DSE30 | -1.422 | 0.000 | Accepted | P-value is significant at 99% confidence level and the beta coefficient is negative. There is a 1.422 times negative impact of IRD on the DSE30. |
| H ₀₉ : There is a significant negative relationship between interest rate of loan and advances and the DSE indices. | DSEX | 0.764 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 0.764 times positive impact of IRLA on the DSEX. |
| | DSE30 | 0.587 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 0.587 times positive impact of IRLA on the DSE30. |
| H ₁₀ : There is a significant negative relationship between exchange rate and the DSE indices. | DSEX | 0.023 | 0.232 | Rejected | P-value is not significant at 90% confidence level and the beta coefficient is positive. |
| | DSE30 | 0.024 | 0.185 | Rejected | P-value is not significant at 90% confidence level and the beta coefficient is positive. |
| H ₁₁ : There is a significant negative relationship between gold price and the DSE indices. | DSEX | 0.055 | 0.000 | Rejected | P-value is significant at 99% confidence level but the beta coefficient is positive and there is a 0.055 times positive impact of GP on the DSEX. |
| | DSE30 | 0.045 | 0.034 | Rejected | P-value is significant at 95% confidence level but the beta coefficient is positive and there is a 0.045 times positive impact of GP on the DSE30. |

5. CONCLUSIONS

This study is conducted to measure the considerable impact of the Covid-19 pandemic caused by the coronavirus on the performance of DSE in Bangladesh. Many micro and macroeconomic variables significant positively and negatively persuade the stock market. Now new factor Covid-19 also included in this pool. From the literature reviewing, five Covid-19 related variables are selected and used in this research.

First, the daily new confirmed cases of Covid-19 in the world has a significant negative impact on both DSEX and DSE30 index. It indicates that higher daily new confirmed Covid-19 cases negatively impact the DSE indices. The daily deaths in the world due to Covid-19 do not negatively influence the DSE indices.

Secondly, the daily new confirmed cases in Bangladesh of Covid-19 are significantly negatively related to DSEX and DSE30 indices. This is very alarming for the economy to ensure the sustainable development of the country. The concerned authority should control the outbreak of Covid-19; otherwise, the stock market and the economy of Bangladesh will drastically decrease. The daily deaths in Bangladesh due to Covid-19 do not negatively influence the DSE indices.

Third, the lockdown imposed in Bangladesh shows the mixed results in this study. Lockdown imposed by the government is significantly negatively related to the DSEX index while significant positively related with DSE30 index. The concern authority should rethink to use the lockdown as the control mechanism of Covid-19. Relaxing the lockdown, the economic activities should be opened for the people.

Fourth, the bank rate and interest rate of deposit are significant negatively associated with the performance of stock market. The interest rate of loan and advance and gold price are significant positively related with the DSE indices. The exchange rate is insignificant but positively related with the stock market performance. The inflation rate has a significant relationship with DSE30 and an insignificant negative relationship with DSEX index.

Finally, the concerned authority should try to reduce the daily new confirmed cases of deaths in Bangladesh. The proper authority should try to control the spread of Covid-19 by taking some initiatives like building awareness among the citizens, reducing unnecessary public gathering, minimizing social functions, ensuring the use of masks and hand sanitizers properly, ensuring isolation for the Covid-19 suspected people, ensuring proper treatment for the Covid-19 infected people and ensuring the vaccine coverage all the people very quickly.

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