Chapter Four: Presentation Analysis

4.1 Introduction

The following is the analysis and discussion section that aims to execute the analysis over the collected data. In the preceding section, it has been discussed that the researcher has supported the study with the quantitative analysis where the major statistical analysis technique such as correlation and regression were discussed to be used. The following section is the demonstration for the execution of the data with respect to the discussed tools. The following section has mainly been bifurcated into two major parts one is concerned with the analysis section and the other is concerned with the discussion section.

4.2 Quantitative Analysis

4.2.1 Descriptive Statistics

Descriptive statistics is usually performed in order to evaluate the characteristics of the data set under observation. With reference to the findings of Bickel (2012), descriptive statistics helps in evaluating the characteristics of the data through quantitative terms. Here it becomes important to mention that while executing descriptive statistics, the values such as mean, median, maximum and minimum values are essential to consider.

Table 1: Descriptive Statistics

	CORRUPTION	FDI	FOREX	GDP	INTEREST_RATE
Mean	26.37863	-2.47E+09	86.46272	2.06E+11	2.160532
Median	25.00000	-2.16E+09	86.69292	2.14E+11	4.020468
Maximum	33.00000	-7.82E+08	122.8017	3.13E+11	8.321457
Minimum	21.00000	-5.49E+09	58.46292	9.80E+10	-6.774088
Std. Dev.	4.093490	1.48E+09	20.54696	6.83E+10	4.620206
Skewness	0.266677	-1.021487	-0.059852	0.025407	-0.665284
Kurtosis	1.742532	2.902020	1.830095	1.870947	2.288427
Jarque-Bera	1.166058	2.614587	0.864380	0.798339	1.422966
Probability	0.558205	0.270551	0.649086	0.670877	0.490916
Sum	395.6795	-3.70E+10	1296.941	3.09E+12	32.40798
Sum Sq. Dev.	234.5932	3.08E+19	5910.483	6.52E+22	298.8482
Observations	15	15	15	15	15

The aforementioned table is a summary of the characteristic of data. With respect to the factor GDP, the mean value has been obtained as 2.06^{+11}. For the variable FOREX, the mean value has been appeared as 86.462 thereby suggesting average foreign exchange value for the country for this specific tenure resembles to the aforementioned value. Moreover, the mean value for the interest rate has been determined as 2.160. The mean value for the variable corruption has been identified as 26.37. Furthermore, the mean value for the dependent variable FDI has been obtained as $2.47^{+09.}$

The median in the data set is considered as the value that separates the upper half values and lowers half values. For the variable, the median value has appeared as 2.14^{+11}. Moreover, the median for the variable FOREX has appeared as 86.692. Additionally, the median for interest rate has been determined as 4.020. Moreover, the median for corruption has also been determined as 25. This suggests that this value distinct the two data set. Lastly, the median for FDI has been measured as $3.13^{+11.}$ Moreover, for the variable FOREX, the values have appeared as 58.46 and 122. 805. The values for the interest rate have been determined as -6.77 and 8.32. Moreover, for corruption, the minimum and maximum values have appeared as 21 and 33. Lastly, for the variable FDI, the minimum value has been appeared as -5.49^{+09} and the maximum value has been observed as $-7.82^{+08.}$

4.2.2 Correlation Analysis

The correlation analysis is deemed as one of the fundamental statistical analysis tools that significantly help in determining whether the association between the variables exists. In light of the study conducted by Yuan (2015), a correlation analysis is supported with the correlation value that determines whether and to what extent the association between the variables exist. The correlation value ranges between 0-1. More specifically, when the value for correlation appeared from 0.1 to 0.3, then it can be articulated that a weak correlation exists between the variables. However, if the correlation value appeared from 0.3 to 0.7, then it can be suggested that moderate association exists between the variable. Apart from this, when the correlation value lies within the range of 0.7 to 1, then it is suggested that a strong association between the variables exists.

Table 2: Correlation Table

	CORRUPTION	FDI	FOREX	GDP	INTEREST_RATE
CORRUPTION	1.000000	-0.500236	0.921626	0.973740	0.668499
FDI	-0.500236	1.000000	-0.721868	-0.576190	-0.394012
FOREX	0.921626	-0.721868	1.000000	0.957617	0.596703
GDP	0.973740	-0.576190	0.957617	1.000000	0.598551
INTEREST_RATE	0.668499	-0.394012	0.596703	0.598551	1.000000

In the current study, the variables or factors that have been identified are in the form of GDP, FOREX, interest rate and corruption. The association of these variables has mainly been measured with the dependent variable of the study i.e. FDI. With reference to the aforementioned table, the correlation value for the variable GDP and FDI has appeared as -0.500. This suggests that though the correlation has been observed as moderate however, a negative association exists between the variables. Further, the correlation value between FOREX and FDI has appeared as -0.72. The value of correlation falls in the high correlation range therefore, it can be stated that strong association exists between the variables. Nonetheless, the value also suggests that a negative association exists between the variables. Moreover, the correlation in the relation between the interest rate and FDI has been identified as -0.394. As the value falls in the moderate range of 0.3 – 0.7 in this aspect, it can be stated that moderate however, a negative association exists between the variables. Lastly, the moderate correlation has also been observed in relation

to corruption and FDI. It has been because of the reason that the correlation value has appeared -0.5.

4.2.3 Unit Root Testing

Unit Root-Testing- GDP

The unit root testing has also been executed in order to determine whether a unit root exists in a time series variable. Moreover, this testing is also done to determine whether the data is stationary or not. The null hypothesis and alternative hypothesis confirm the presence or absence of a unit root in a time series data. The following is the unit-root testing for the variable GDP. Here it becomes important to mention that the probability value determines the presence of the unit root and suggests whether the data is stationary or non-stationary. As the probability has appeared greater than the threshold value of 0.05 therefore, it can be suggested that the unit root exists and confirms the data is non-stationary.

Table 3: Unit Root-Testing- GDP

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.291522	0.1872
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

Unit Root-Testing- FOREX

Similarly, the following is the unit root-testing for the variable FOREX. The probability value has appeared as 0.969 which is considerably greater than the threshold value of 0.05. In this sense, it can also be confirmed that unit root also exists in the data set obtained for the variable FOREX. Moreover, this also confirms the collected data is non-stationary.

Table 4: Unit Root-Testing- FOREX

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.284945	0.9679
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

Unit Root-Testing- Interest Rate

The below-mentioned table illustrates the unit root testing for the variable interest rate. The probability value has appeared as 0.818. In this sense, it can be suggested that interest rate the unit root and the data is non-stationary.

Table 5: Unit Root-Testing- Interest Rate

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.670459	0.8181
Test critical values:	1% level	-4.121990	
	5% level	-3.144920	
	10% level	-2.713751	

Unit Root-Testing- Corruption

The following is the unit root testing for the variable corruption. With reference to the obtained probability value, it can be confirmed that in the time series obtained for the variable corruption, the unit root also exists. Consequently, it can also be confirmed that the data is non-stationary in nature.

Table 6: Unit Root-Testing- Corruption

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.754527	0.9876
Test critical values:	1% level	-4.121990	
	5% level	-3.144920	
	10% level	-2.713751	

Unit Root-Testing- FDI

In the below-mentioned table, unit root testing has been executed for the independent variable of the study FDI. With regards, to the obtained probability value (0.6835), it can be confirmed that the unit-roots also exist in the gathered time-series data. This confirms that the gathered data is non-stationary.

Table 7: Unit Root-Testing- FDI

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.101563	0.6835
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

4.2.4 Cointegrating Regression Analysis

A cointegrating regression analysis is also considered as an essential statistical analysis tool that helps in determining the relationship between the variables. With respect to the findings of Nathans (2012), regression analysis helps in analysing the influence of the independent variable on the dependent variable. In the current regression analysis, the effort has been made to analyse the influence of GDP, FOREX, interest rate and corruption on the FDI within the context of Pakistan.

Table 8: Regression Model

R-squared	0.813135	Mean dependent var	1.440598
Adjusted R-squared	0.730084	S.D. dependent var	1.105354
S.E. of regression	0.574270	Sum squared resid	2.968074
Durbin-Watson stat	1.598079	Long-run variance	0.254482

In the aforementioned table, the model summary for the developed regression model has been illustrated. In the aforementioned table, the R-squared and Adjusted R-squared values are essential to consider in order comprehending the characteristics of the developed regression model. In light of the study conducted by Miles (2014), R-squared value defines to what extent the independent variables predict the developed regression model. The value of R-squared has appeared as 0.813. This suggests the independents variable predicts the developed regression model for up to 81.3%. In this sense, the obtained value also justifies the appropriateness of the developed regression model. Moreover, the value of Adjusted R-square is also essential to consider in order determining whether the predictors improve the model upon their adjustment. Moreover, it also becomes important to mention that the value adjusted R-square decreases when the predictors improve the model. As the value of Adjusted R-square has been appeared as lesser in comparison with the R-squared value, therefore it can be suggested that the predictors in the form of GDP, FOREX interest rate and corruption significantly predict and improve the regression model.

Table 9: Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CORRUPTION	0.305363	0.129189	2.363691	0.0423
FOREX	-0.108223	0.023275	-4.649753	0.0012
INTEREST_RATE	-0.029298	0.041456	-0.706741	0.4976
LGDP	0.869079	2.011471	0.432062	0.6759
C	-19.79863	48.60998	-0.407296	0.6933

The aforementioned table is the table of the coefficient that illustrates the individual relationship of each independent variable with the dependent variable. Moreover, through this table, it can be easily determined what variables influence the dependent variable. In the table

above, the probability value is essential to consider in order determining whether the significant relationship exists between the variables. Furthermore, the table above helps in determining whether the influence of the dependent variables on the dependent variable can be observed.

As already discussed, the probability value must be lesser than 0.05 in order to claim significant relationship exists between the variable. The probability value for GDP has appeared as 0.675. As the value is greater than the threshold value, in this sense, it can be articulated that an insignificant relationship exists between the variables. Moreover, it also confirms that no influence can be observed of GDP on FDI. This specific finding contradicts with one of the previous findings put forward by Ali and Malik (2017). According to them, there is a significant relationship between GDP and FDI. However, the researchers have also suggested that this relationship has also not been confirmed by several prior researchers. Similar to this, the current findings have also confirmed an insignificant relationship. In this notion, the findings of the current study can be confirmed and validated.

With regard to the variable FOREX, the probability value has appeared as 0.0012. As this value is lesser than the threshold value of 0.05 therefore, it can be suggested that the significant relationship do exists between FOREX and FDI. Meanwhile, it can also be stated that FOREX significantly influences the FDI. Nonetheless, it becomes important to highlight the coefficient value that has appeared in negative. In this sense, it can be articulated that though FOREX establishes a significant relationship with FDI however, it negatively influences the FDI in the context of Pakistan. The relationship can also be supported by one of the secondary findings suggesting an increase in FDI increases the demand for currency (Lee and Wang, 2018)). In this sense, the discussed prior findings also confirm the findings of the current study. The finding confirms that the significant relationship between the variables exist however, the current study has suggested that significant but negative relationship exists between FOREX and FDI.

The probability value for the interest rate has appeared as 0.487. The value is greater than the threshold value of 0.05. In this aspect, it can be confirmed that no significant relationship exists between the variables interest rate and the dependent variable of the study i.e. FDI. Moreover, this can also be confirmed that the interest rate does not influence FDI within the context of Pakistan. This can also be confirmed with one of the literature findings suggested by Hadi, Zafar, Iqbal, Zafar, and Hussain (2018) arguing that the low-interest rate does not contribute to the attraction of FDI. In this notion, the findings of the current study can be

confirmed and supported. Lastly, the probability value for corruption has been obtained as 0.0423. As the value has appeared lesser than 0.05 therefore, it can be articulated that a significant relationship exists between corruption and FDI with respect to the case of Pakistan. This contradicts the findings suggested by Canare (2017) who have suggested that corruption tends to decrease the FDI inflows and suggested that countries that were less corrupt were able to receive higher FDI inflows. The reason for this significant can be due to the limited tenure study or the delimiting factors where the researcher was unable to acquire sufficient data to investigate this relationship.

4.3 Discussion

One of the objectives of the study was to analyse the impact of GDP on FDI. The findings of this study suggest that GDP does not influence significantly to FDI. The current findings are in contradiction with the literature findings such as Ali and Malik (2017) who have suggested that positive relationship exists between GDP and FDI. This contradiction is justified in a sense; higher GDP is deemed as the one positive indicator for the market and become the source of attraction for foreign investors.

Moreover, determination of the impact of FOREX on FDI was also the one objective. The study confirms the significant relationship of FOREX with FDI nonetheless; negative influence has also been confirmed. In this sense, it can be suggested that higher FOREX can affect FDI inflows. The findings of Cambazoglu and Günes (2016) have also suggested that those FDI inflows are also subject to foreign exchange rates as the decrease in FOREX indicates the depreciation in the domestic currency which also effects the foreign investment.

Analysing the impact of interest rate on FDI was also the one objective. In the current study, an insignificant relationship has appeared between the interest rate and FDI. The study of Hadi, Zafar, Iqbal, Zafar, and Hussain (2018) has suggested that a low interest rate does not affect FDI in countries like Malaysia. In this sense, the findings of the current study can be supported with the aforementioned literature findings that have also indicated that the interest rate does not influence FDI.

Analysing the impact of corruption on FDI was also the one underlying objective for the current study. The study has found a significant impact of corruption on FDI. However, in the prior findings, it has been discussed that that corruption establishes a negative relationship with

FDI (Canare, 2017). Meanwhile, it has also been discussed in the prior studies that FDI is fostered among those countries on which foreign investors develop trust and appreciate the transparency and accountability. Nonetheless, the current study confirms the positive relationship between the variables and suggests the corruption positively influences FDI.