



HOW UNEMPLOYMENT REACT RESPECTIVE TO GDP GROWTH, INFLATION, DEMOGRAPHIC CHANGE AND FOREIGN DIRECT INVESTMENT (FDI)

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ABSTRACT

Unemployment poses a persistent challenge across South Asia, particularly in Bangladesh where it has become a pressing issue. Factors such as economic conditions, demographic structure, women's participation, and rural-to-urban migration contribute significantly to this problem. The relationship between economic growth and unemployment in Bangladesh is notably negative. This study aims to assess the impact of key macroeconomic factors on the rising unemployment rate in Bangladesh. It utilizes a dataset spanning from 1995 to 2019, focusing on GDP, inflation, population growth, and FDI. The Augmented Dickey Fuller test is employed to determine the stationarity of variables, revealing that GDP, inflation, and FDI are stationary at the level and intercept, while unemployment is stationary at the first difference. Through further analysis including co-linearity, co-integration tests, and the least squares method, it is evident that there exists a long-term relationship between these factors and unemployment in Bangladesh. Notably, economic indicators such as GDP and FDI significantly influence the unemployment issue. Theoretically, there is a positive correlation between unemployment and economic growth. Granger causality testing confirms a unidirectional influence, with the unemployment rate impacting economic factors. The findings of this study offer valuable insights for policymakers, enabling them to tailor policies aimed at reducing unemployment in Bangladesh.

KEYWORDS: GDP, Unemployment, growth.

1. INTRODUCTION

Unemployment occurs when individuals are without a job. The unemployment rate is determined by dividing the total number of unemployed individuals in a country by its total population. High unemployment rates pose significant challenges for managing a nation. Fluctuations in the demand and supply of jobs directly impact the unemployment rate. The availability of labor force greatly affects this rate within a country. The primary cause of unemployment is the disparity between the demand for labor and its supply. Overproduction exacerbates this issue by driving down product prices, reducing the need for labor and consequently increasing unemployment.

Low market demand also drives down prices, leading to a shift from employment to unemployment. Rural-to-urban migration exacerbates this trend, increasing unemployment rates. Social status, population growth, a flawed education system, and geographical immobility further contribute to rising unemployment. Additionally, factors such as lack of experience, vocational training, and

disability play crucial roles. Slow development, poor economic structure, government and public sector disinvestment, and geographical immobility of resources also contribute to unemployment. Employment is the primary source of income for Bangladeshi people, and poverty and unemployment are closely intertwined. Poverty restricts employment opportunities, while employment ensures earning capacity and livelihood security. Investment stimulates employment, fostering development and economic growth. Creating new job sectors is crucial for sustainable development and poverty alleviation, as access to basic necessities depends on employment. The spending of employed individuals has multiplier effects on the country's economy. Bangladesh faces significant challenges of unemployment and poverty. Addressing this complex issue requires creating sufficient job opportunities. Unemployment is particularly acute among the young and educated population in the era of globalization and free markets. Exchange rates play a pivotal role in the Bangladeshi economy, influencing job numbers. Devaluation of currency reduces import expenses, increases exports, attracts foreign currency inflows, boosts economic growth, and reduces unemployment. Unemployment is a global issue, including in Bangladesh. According to an ILO report from 2014, 6% of the global workforce was jobless, but the situation is more severe in Bangladesh. Millions of Bangladeshis are unemployed, with 4.18% of the country's labor force currently jobless according to the Bangladesh Bureau of Statistics. Despite the creation of new jobs, a survey indicates that 3.4 million people in Bangladesh remain unemployed.

2. LITERATURE REVIEW

Classical economists define unemployment as the excess supply of the workforce compared to the demand for it. Unemployment occurs when the number of job seekers surpasses the available job vacancies, or when real wages in the market fall below expectations. The International Labor Organization (ILO) defines unemployment as a situation where individuals actively seek employment within the preceding five weeks. Unemployment is calculated by dividing the number of unemployed individuals by the total labor force. Inflation, according to Kim and Lin (2012), refers to a sustained increase in the general price level over an extended period. It is measured by identifying the rate of price increase over a specific timeframe.

Tas and Demir (2013) found that as per capita income rises within an economy over time, unemployment tends to decrease. Economic growth is characterized by an increase in the production of goods and services within a country, with the rate of growth being a key determinant of a country's condition. Avriel, Hilscher, and Raviv (2012) suggest that economic growth occurs when propensity and capital in innovation increase, with technical progress supporting positive economic outcomes.

Regarding the relationship between economic growth and unemployment, Tillmann (2013) focused on the role of urbanization and income inequality, finding that high unemployment rates do not necessarily hinder growth, but rather have an inverse impact when coupled with inequality. Risa (2001) applied a quantitative strategy to demonstrate a negative relationship between unemployment and growth, emphasizing the significant relationship between the two. Kashpher and Kushbu (2011) researched the impact of economic growth and inflation on unemployment in Pakistan, finding that inflation significantly exacerbates unemployment while economic growth has an inverse influence on unemployment in both the short and long run.

Meltzer (2006) discussed the significant connection between economic growth and unemployment according to Ordinary Least Squares (OLS) analysis, focusing on unemployment and economic growth in Fiji. Arras (2016) highlighted issues of youth inactivity and unemployment disparities among degree holders in Bangladesh. Canarella and Miller (2014) studied unemployment in South

Africa from 1995 to 2003, emphasizing the threat of underemployment and unemployment to the country's political and social stability. Drobyshevsky and Kazakova (2015) analyzed factors related to the unemployment rate, while Collins (2016) focused on economic conditions and solutions to rising unemployment rates in Nigeria. Rochmah and Faizi (2014) examined unemployment determinants in Bangladesh, emphasizing the role of human capital and macroeconomic factors. Miura (2019) studied the impact of unemployment on workers of different ages, highlighting its negative effects on well-being, especially among the aged and young workers, in the EU.

Gross Domestic Product

The ultimate measure of a country's economic output is its Gross Domestic Product (GDP). GDP serves as a comprehensive indicator of a nation's economic performance, representing the total monetary value of all goods and services produced within its borders. GDP is calculated by considering the monetary value of finished goods and services produced within the country's boundaries. This calculation typically involves three primary approaches: income, expenditure, and production, all measured over a specific time period. These approaches provide a comprehensive view of the economic activity occurring within the country and are crucial for assessing its overall economic health.

Inflation

Inflation refers to the increase in prices of goods and services over time, typically measured from one year to another. While inflation is a common occurrence in many countries, higher inflation rates can pose significant challenges to the economy. Essentially, inflation results in the devaluation of a country's currency. Excessive inflation can lead to reduced demand for products, which in turn impacts the overall production of the country. A decrease in production consequently reduces the demand for the workforce as well. Thus, inflationary pressures can have far-reaching effects on the economy, affecting both consumers and producers alike.

3. DATA AND METHODOLOGY

In our analysis of determinants of unemployment in the Bangladesh economy, we employed a Simple Single Equation Linear Regression Model (SELRM). The model is specified as follows:

The study model is:

$$Y = \alpha + \beta_{GDP} + \beta_{INR} + \beta_P + \beta_{FDI} + \bar{U}$$

Here,

Y= Unemployment Rate of Bangladesh

α = refers to the unknown intercept for each entity

GDP=Gross Domestic Product of Bangladesh

INR=Inflation rate of Bangladesh

PG=Population growth of Bangladesh

FDI= Foreign Direct Investment

\bar{U} = refers to the error term

Unemployment occurs when individuals actively seek employment but are unable to secure jobs. It represents the portion of the workforce that is willing and available to work but remains jobless. Typically, the unemployment rate is computed by dividing the total labor force by the number of individuals who are unemployed. Unemployment serves as a crucial gauge of economic health, with lower rates indicative of a robust economy. The primary source of unemployment stems from individuals actively seeking work but facing challenges in securing employment opportunities. In a

thriving economy, the unemployment rate tends to be lower. Conversely, in times of economic distress, unemployment rates soar due to diminished job opportunities and lower economic output. Various types of unemployment exist, including cyclical and structural forms. Cyclical unemployment occurs as a result of fluctuations in economic activity, such as during recessions, while structural unemployment arises from shifts in industries or technological advancements that render certain skills obsolete.

4. RESULT ANALYSIS AND DISCUSSION

Determination of Research Variables

To conduct the research our required variables will be following:

Table 1: Variables of the Research

Name of the variables	Type of the variable
Unemployment Rate	Dependent Variable
GDP Growth	Independent Variable
Inflation Rate	Independent Variable
Population Growth Rate	Independent Variable
FDI	Independent Variable

Unemployment U

= f (Gross domestic product +, Inflation+Population growth, Foreign Direct investment)

Model specification:

$$Y = \alpha + \beta_1(GDP) + \beta_2(INF) + \beta_3(PG) + \beta_4(FDI)$$

In our analysis, we denote Y as the total unemployment rate of Bangladesh. Our expectation is that GDP will exhibit a negative correlation with unemployment, indicating that as GDP increases, unemployment decreases. Conversely, we anticipate a positive relationship between inflation and unemployment, suggesting that higher inflation rates are associated with higher levels of unemployment. Population growth, defined as the percentage increase in population over a year, is expected to have a positive relationship with unemployment. This implies that as population growth increases, so does the unemployment rate. On the other hand, we anticipate a negative correlation between foreign direct investment (FDI) and unemployment, indicating that higher levels of FDI are associated with lower unemployment rates in Bangladesh.

Table 2: Descriptive Statistics Results

	Unemployment Rate	Population Growth	Inflation Rate	GDP Growth	FDI
Mean	0.04	0.01	0.06	0.05	20.2
Median	0.04	0.01	0.06	0.06	20.1
Maximum	0.06	0.05	0.11	0.080	21.2
Minimum	0.02	-0.01	0.01	0.04	19.3
Std. Dev.	0.01	0.01	0.02	0.01	0.67
Skewness	-0.07	1.64	-0.001	0.29	0.28

Based on the table provided, it's evident that the data for unemployment, population growth, and inflation rate do not exhibit a normal distribution. For unemployment, the mean is 0.036590, median is 0.037495, with a maximum value of 0.055210 and a minimum value of 0.022790. The skewness is not zero, indicating non-normal distribution. Similarly, for population growth, the mean is 0.036590, median is 0.037495, with a maximum value of 0.055210 and a minimum value of 0.022790. The skewness is also not zero, indicating a deviation from normal distribution. Lastly, for inflation rate, the mean is 0.060486, median is 0.061500, with a maximum value of 0.115000 and a minimum value of 0.042000. Again, the skewness is not zero, suggesting non-normal distribution. In summary, none of the datasets for unemployment, population growth, and inflation rate follow a normal distribution pattern.

Regression Analysis on Raw Data

Table -3: Outcome of Multiple Regressions with Level of Significance denoted by * for 5% and ** for 10%.

Variables	Coefficients	T-value	P value
Population Growth	-0.12	-0.99	0.32**
Inflation Rate	-0.02	-0.37	0.70**
GDP Growth	0.12	0.55	0.58**
FDI	0.01	2.39	0.02*

The analysis of the table reveals that the coefficients associated with population growth, inflation, and GDP growth are not statistically significant or satisfactory. Specifically, the coefficient for population growth is unexpected. According to conventional wisdom, an increase in population growth should correspond with an increase in unemployment. However, this relationship does not hold true at a 5% probability level. On the other hand, the coefficients for GDP growth and inflation exhibit the expected signs. Additionally, the impact of foreign direct investment (FDI) aligns with expectations, indicating that an increase in FDI leads to a rise in the unemployment rate. Importantly, FDI shows statistical significance at the 5% probability level. Moreover, the significance level of FDI suggests its long-term influence on the unemployment rate in Bangladesh.

Diagnostic Test

Augmented Dickey Fuller Test of Unit Root

Table-4: Outcome of the Unit Root Test. P value less than 5% is denoted by * of level of significance.

Name of Variables	P Value	T -Value	Level of Test	Decision
Unemployment	0.51	-1.50	Level & Intercept	As $P > 5\%$, Unit Root of data
Population Growth	0.00*	-5.08	Level & Intercept	As $P < 5\%$, Unit Root of data does not exist
Inflation Rate	0.00*	-4.84	Level & Intercept	As $P < 5\%$, Unit Root of data does not exist
GDP Growth	0.91	-0.32	Level & Intercept	As $P > 5\%$, Unit Root of data

FDI	0.97	0.22	Level & Intercept	As P> 5%, Unit Root of data
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The diagnostic tests conducted on the variables in the study indicate that population growth and inflation rate exhibit stationarity over time. This implies that these variables do not undergo drastic movements that could significantly disturb their overall trends. However, GDP growth rate, unemployment rate, and foreign direct investment are afflicted by a unit root or non-stationary issue over time. This presents a challenge as the standard error may contribute to movements in these variables. The probability values exceeding 5% in the provided table suggest that the null hypothesis, indicating the existence of a unit root in the model, must be accepted. In summary, while population growth and inflation rate remain stationary, the presence of a unit root in GDP growth rate, unemployment rate, and foreign direct investment underscores potential challenges in the analysis, where fluctuations in these variables could be influenced by the standard error.

Stationary test of the Variables

To conduct the stationary test, we will utilize the raw data once more. The output and interpretation of the test are as follows:

Table 5: Outcome of the Stationary Test. P value less than 5% is denoted by * of level of significance.

Name of Variables	T -Value	P Value	Level of Test	Decision
Unemployment	-6.83	0.000*	Level&1st Difference	P <5%, Data is Stationary
Population Growth	-5.08	0.001*	Level & Intercept	P <5%, Data is Stationary
Inflation Rate	-4.84	0.001*	Level & Intercept	P <5%, Data is Stationary
GDP Growth	-5.26	0.0003*	Level&1st Difference	P <5%, Data is Stationary
FDI	-5.391890	0.0002*	Level&1st Difference	P <5%, Data is Stationary

After identifying the unit root problem in the model variables, we proceeded to conduct stationary tests. In the table provided, it is observed that all initially non-stationary variables have been transformed into stationary ones both at the level and after taking the first difference. Moreover, the probability values associated with these tests are less than 5%. This indicates that we can confidently accept the alternative hypothesis, signifying that the data has been successfully made stationary through the transformations applied.

Heteroskedasticity Test

Table 6: Breusch-Pagan-Godfrey test of Heteroskedasticity

Name of test	F-statistic	Probability
Breusch-Pagan-Godfrey	0.517403	0.7237
Obs*R-squared	2.311529	0.6787

In examining the relationship among the selected variables, it is crucial to assess the stability of these variables over time. The Heteroskedasticity test conducted above suggests that the variance of the data for variables such as unemployment rate, GDP, FDI, population growth, and inflation rate should remain constant in future periods. The probability value obtained from the test exceeds 5%, leading to the acceptance of the null hypothesis. This indicates that the variance of the data remains constant over time, and there is no evidence of Heteroskedasticity problem within the model.

Serial Correlation Test

Table 7: Breusch-Pagan-Godfrey test of Serial Correlation

Name of test	F-statistic	Probability
Breusch-Godfrey Serial Correlation LM Test	5.237920	0.0143
Obs*R-squared	9.319005	0.0095

The values of the selected variables may exhibit correlation across different time periods. For instance, the unemployment rate might be correlated with its own values in future periods. The LM test conducted yields a probability value less than 5%, indicating that the null hypothesis is rejected in favor of the alternative hypothesis. This suggests that serial correlation is present among the defined variables in the model.

Least Square Analysis of the Study

Table-8: Results of Multiple Regressions on Stationary Data. Level of Significance is denoted by * for 5% and ** for 10%.

Variables	Coefficients	T-value	P value
Population Growth	0.05	0.52	0.60
Inflation Rate	0.02	0.59	0.55
D(GDP Growth)	-0.58	-2.61	0.01*
D(FDI)	-0.001	-0.42	0.67
Intercept	-0.0006	-0.18	0.85

The regression analysis conducted on the stationary properties of the variables reveals several key findings. This variable emerges as the only statistically significant factor at the 5% level of significance. The results suggest that for every percentage increase in the unemployment rate, GDP growth decreases by 0.58%. While FDI demonstrates the expected sign, indicating that a 1% increase in FDI decreases the unemployment rate by 0.0%, this effect is not statistically significant. Although the inflation rate does not exhibit the expected sign, its impact is not statistically significant at the 5% level. The constant term representing the baseline level of unemployment rate is insignificantly different from zero at the 5% level of significance. Overall, the regression model explains 24% of the variation in the unemployment rate due to changes in FDI, GDP, population growth, and inflation rate.

Multicollinearity Test of the Model

The results of the correlation test among the variables are as follows

Table 9: Correlation Matrix of the Variables

	Unemployment Rate	Population Growth	Inflation Rate	GDP Growth	FDI
Unemployment Rate	1				
Population Growth	-0.35	1			
Inflation Rate	0.08	-0.19	1		
GDP Growth	0.62	-0.26	0.11	1	
FDI	0.71	-0.32	0.16	0.79	1

The correlation analysis reveals several unexpected relationships with the model. While the negative correlation (-0.35) between unemployment and population growth, the positive correlation (0.08) between unemployment and inflation, and the positive correlation between GDP growth and unemployment are contrary to the model's expectations, the positive correlation between unemployment and FDI aligns with the model. Moreover, the negative correlation (-0.19) between population growth and inflation, the positive correlation (0.11) between GDP growth and inflation, and the positive correlation between GDP growth and FDI are in line with expectations. However, the negative correlation between FDI and population growth, and the negative correlation (-0.26) between GDP growth and population growth are unexpected. Additionally, the positive correlation (0.16) between FDI and inflation corresponds with the model's expectations. Further exploration may be needed to understand the underlying dynamics and implications for the model.

Regression after Deducting Foreign Direct Investment

Table 10: Results of the multiple Regressions after deducting FDI

Variables	Coefficients	T-value	P value
C	0.009	0.894	0.380
Inflation	-0.007	-0.141	0.888
GDP Growth	0.538	3.546	0.001
Population Growth	-0.182	-1.292	0.208

The presence of higher standardized errors in the model can indeed impact the regression results, and multicollinearity exacerbates this issue by inflating these errors. By removing the variable with the higher probability value in the stationary regression outcome, it is evident that only GDP growth rate remains significant at the 5% level of significance. However, the unexpected finding emerges: an increase in GDP growth rate is associated with an increase in the unemployment rate, a pattern unlikely in conventional economic structures. Moreover, the negative relationship between population growth rate and unemployment growth, although unexpected, is statistically insignificant. Only the relationship between inflation and unemployment becomes expected when compared to the coefficient comparison, yet it too lacks significance at the 5% level. Further analysis may be necessary to reconcile these findings and understand their implications for the economic model.

Granger Causality Test

Table 11: Result of Granger Causality Test. Level of significance is shown by * for 5% and ** for 10%.

Variable	F-Statistic	Probability
GDP_GROWTH does not Granger Cause UNEMPLOYMENT_RATE	4.66	0.02*
UNEMPLOYMENT_RATE does not Granger Cause GDP_GROWTH	4.27	0.02*
FDI does not Granger Cause UNEMPLOYMENT_RATE	2.72	0.08**
FDI does not Granger Cause GDP_GROWTH	3.93	0.03*
GDP_GROWTH does not Granger Cause FDI	4.85	0.01*

The Granger causality test indicates that some independent variables can influence themselves as well as the dependent variable, unemployment rate, while the unemployment rate can also affect population growth, inflation rate, GDP growth, and FDI. In the unidirectional Granger causality test, it's observed that the probability value is less than 5% for the impact of GDP growth on the future unemployment rate, signifying significance. Furthermore, the unemployment rate significantly influences GDP growth in the long run, with a 5% level of probability. FDI demonstrates a significant impact on the movement of the unemployment rate, serving as a significant factor at the 5% level of significance. Additionally, FDI has a Granger causality or unidirectional impact on GDP growth in the long run, with significance at a 5% level, confirming the acceptance of the alternative hypothesis. Lastly, GDP growth rate has a significant impact on FDI in the long run, with a probability value less than 5%. These results highlight the intricate interplay among the variables and their causal relationships over time.

Co integration Test

Table 12: Co integration Results with Level of significance is shown by * for 5% and ** for 10%.

Hypothesized No. of CE(s)	Max Eigen Stat Value	0.05 Critical Value	Probability
None *	39.39	69.82	0.02
At most 1	18.23	47.86	0.39
At most 2	12.05	29.79	0.58
At most 3	5.59	15.49	0.73
At most 4	0.11	3.841	0.74

The variables, including Unemployment Rate, GDP Growth Rate, Inflation Rate, Population Growth Rate, and FDI, exhibit non-stationarity at the level but become stationary at first difference. Moreover, these variables are found to be co-integrated in the long run, with up to four co-integrations existing in the model as indicated by the probability value and the Max Eigen statistic. With the probability value exceeding 5%, the null hypothesis cannot be rejected, signifying the presence of co-integrations in the model, with four being the number of co-integrations. The long-term relationship among unemployment and the other variables underscores unemployment's role as a determinative factor in shaping economic policy.

Generalized Least Square Analysis

Table 13: Generalised Least Square Regression Results. Level f significance is shown by * for 5% and ** for 10%.

Variable	Coefficient	STD. Error	Probability
Population	-0.12	0.13	0.31
Inflation Rate	-0.01	0.05	0.70
GDP growth	0.12	0.22	0.57
Foreign Direct investment	0.007	0.00	0.01*
C	-0.12	0.06	0.02*

In the results of the generalized least square analysis presented in the table, Foreign Direct Investment emerges as significant at the 5% level of significance. Notably, regardless of changes in the independent variables, the unemployment rate is projected to decrease by 12% over time. However, the coefficient of population growth yields an unexpected sign, suggesting a negative relationship between population growth and unemployment growth. This phenomenon may be attributed to efficient utilization of population or human resources, particularly in Bangladesh, where population growth has remained stable while the economy has seen consistent growth, thereby reducing unemployment. Despite a stable or slightly fluctuating inflation rate over the last decade, investment and industrialization efforts have contributed to lowering unemployment. A paradoxical trend arises with increasing GDP growth coinciding with rising unemployment, potentially due to factors such as a significant portion of educated individuals remaining unemployed or an increase in the natural rate of unemployment. This situation in Bangladesh could be attributed to unplanned economic strategies, high illiteracy rates, weak human resource management, and inadequate monetary and fiscal policies in recent years. While Foreign Direct Investment impacts unemployment rates as expected, its influence remains relatively low. Interestingly, all other independent variables prove insignificant. Bangladesh grapples with a persistent challenge of high unemployment rates and an unstable economic environment in recent years. However, controlled levels of GDP and population growth have contributed to managing the unemployment problem thus far. Looking ahead, it may be imperative for the country to implement legal and necessary measures to address the crisis in human capital effectively.

5. CONCLUSION

It has been observed that the coefficients of population growth and inflation are not satisfactory or significant, contrary to expectations (Lahiri and Sheng, 2008). Despite the conventional notion that increasing population growth leads to higher unemployment rates, this relationship is not evident at the 5% probability level. Conversely, the coefficients of GDP and inflation exhibit the expected signs. Furthermore, foreign direct investment (FDI) demonstrates the anticipated impact, with increases in FDI resulting in heightened unemployment rates (Dianita, Hadian, Ali, and Aryanti, 2020). FDI also proves significant at the 5% probability level, with its significance supporting its long-term influence on unemployment rates in Bangladesh. Diagnostic tests suggest that both population growth and inflation rates are stationary over time (Wesolowski, 2016).

The variables of growth rate, unemployment rate, and Foreign Direct Investment (FDI) exhibit a unit root or non-stationary problem over time, as indicated by the probability values exceeding 5% in the provided table, leading to the acceptance of the null hypothesis and suggesting the existence of a unit root in the model (Billi, 2013). Additionally, unexpected correlations are observed among

the variables: the negative correlation (-0.35) between unemployment and population growth, the positive correlation (0.08) between unemployment and inflation, and the positive correlation between GDP growth and unemployment, contrary to model expectations. Conversely, the positive correlation between GDP growth and FDI aligns with expectations, as does the negative correlation between FDI and population growth (Marcellino, Banerjee, and Masten, 2003). These unexpected correlations may necessitate further investigation to better understand their implications for the model.

The correlation between Foreign Direct Investment (FDI) and inflation shows a positive relationship of 0.16, while the correlation between FDI growth and GDP growth also exhibits a positive relation. Additionally, there is a positive correlation of 0.11 between GDP growth and inflation, contrasting with the negative correlation of -0.26 between GDP growth and population. This positive relation between FDI and inflation is in line with expectations. Furthermore, the results of the generalized least square analysis highlight the significance of FDI at the 5% level, indicating that irrespective of changes in the independent variables, unemployment rate is projected to decrease by 12% over time. However, the coefficient of population growth yields an unexpected sign, suggesting a negative relationship between population growth and unemployment growth. This unexpected finding may be attributed to efficient utilization of population or human resources. Moreover, in Bangladesh, stable population growth coupled with economic growth has contributed to a reduction in the unemployment rate (Shelley and Wallace, 2004). Despite stable inflation rates, investment and industrialization efforts have helped lower unemployment. However, the unexpected rise in unemployment despite increasing GDP growth may be attributed to factors such as high unemployment among educated individuals or an increase in the natural rate of unemployment. Addressing these challenges may require implementing measures to enhance workforce participation and mitigate unemployment rates in Bangladesh.

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