



Economic Indicators and Labor Market Dynamics in South Asia's Emerging Economies: Through Random Effect Model

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ABSTRACT

The article aims to test the relationship of key economic factors such as growth in GDP, inflation, FDI, interest rates, gross national income, and population increase with unemployment within eight emerging economies of South Asia (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka) for the period between 2001 and 2023. The empirical findings use a random-effects model in order to measure within-country panel heterogeneity and analyze the interaction between demographic and economic determinants that influence unemployment. This is with the intention of enabling deep insight into the region's labor market, concentrating on both time-series and cross-sectional heterogeneity. Unemployment is not significantly influenced by GDP growth in diverse economies. Inflation and interest rates have a high correlation with unemployment, while FDI reduces it but its applicability is unknown. Population growth interacts with other economic determinants. This study presents new evidence for the labor market behavior of the emerging economies in South Asia based on an assessment of the overall influence of economic and demographic variables on unemployment. The findings accentuate the imperatives of having a balanced economic policy that finds a balance between stable growth, low inflation rates, competitive interest rates, and targeted FDI policies. Moreover, the article emphasizes the necessity of workforce development interventions, particularly educational and upgrading of skills, to balance the upcoming labor supply with market needs. This overall integrated program is crucial in ensuring labor employment sustainability on a long-term scale in the region.

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KEYWORDS: Unemployment, Economic Growth, Demographic Change, GDP, Development, South Asia.

INTRODUCTION

Context and Rationale

South Asia is home to almost a quarter of the world's population in its eight countries: Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. It is also among the world's fastest-growing regions. The region has undergone remarkable structural transformation: greater foreign investment, deepening economic integration with the rest of the world, and within themselves. Despite these performances, steady and equitable economic growth lies ahead in the future of South Asia, with employment dynamics being one of the challenges. Economies within South Asia are characterized by a young and growing labor force, forming opportunities and challenges alike (Amornkitvikai et al., 2022). While an unusually high proportion of youth in the region is entering the workforce,

sometimes referred to as a "youth bulge," allowing for the possibility of a demographic dividend, this also raises questions about whether these economies will be able to create enough good jobs. Agriculture being the primary source of employment in the region, especially in rural areas, although some countries like Bangladesh and India have created some jobs through expansion in the industrial and service sectors, high rates of unemployment, underemployment, and informal employment have resulted (Drejerska, 2024).

These labor market issues are compounded by more general structural and macroeconomic problems. Cyclical variations in GDP growth add to the intricacy of economic stability for South Asia, itself determined by a range of influences including regional conflict, political instability, and commodity export dependence (Mumtaz & Qurat-ul-Ain,

2022). A large part of South Asian economies still faces unstable inflation rates that erode real wages and hence determine cost of living pressures-particularly on households in the lower income deciles (Finck & Tillmann, 2022). Even while FDI has been on the rise in recent times, it remains unevenly distributed across the region, with a preponderance of such flows concentrated within a few countries. It thus underpins income inequality and decreasing job opportunities in other countries. Besides, the government spending strategies pursued by South Asian economies demonstrate significant divergence indicative of differences in their fiscal capacity and governance systems. These differences impact the ability of economies to finance job-creating programs and social safety nets. Other demographic factors influencing the employment and economic environments within South Asia are high population growth rates. Demographic momentum strengthens the need to sustain high economic growth which absorbs more workers and reduces poverty (Fields, 2023). Unless there is robust and inclusive employment growth, economic growth may not percolate down to the majority of the workforce, and growing inequality together with swelling social unrest becomes a reality. Now, more than ever, realizing a holistic and regional-specific grasp of factors that influence the nature of employment in South Asia is crucial. For instance, policymakers in South Asia should know how economic indicators such as the growth of GDP, inflation, FDI inflows, government spending, interest rates, and levels of employment are interlinked. The potential therein that this will enable effective policies for the stability and growth of the economy, with the creation of employment opportunities, might as well have the added effect of responding to urgent job demands in the region and, generally speaking, improving the living standards. In this perspective, the study situates itself in the larger framework of economic development in South Asia with the aim of trying to bridge the information gap on the relationship between employment and macroeconomic conditions by providing a framework for the creation of evidence-based policies supportive of equitable and sustainable growth across South Asia.

Research Gap

While much of the literature exists on the impact of economic determinants on levels of employment around the world, very little of this literature is focused on the growing economies of the South Asian region. Available research also rests essentially upon individual countries, such as Bangladesh and India, with very little or no regional overview. Single-country studies cannot fully appreciate the unique patterns and configurations of employment in the South Asian subcontinent because they miss the larger interdependencies and regional trends (Faggian et al., 2013). Most of this research also is based on only short-term, or cross-sectional, analyses and thus ignores the longer-term relationships of labor to other economic variables in these dynamic economies (T. Liu & Spector, 2005).

The most frequent past research, in methodological terms, is generally content with simpler types of regression models that do not apply more sophisticated methodologies, such as fixed effects panel models aimed at controlling for unobserved heterogeneity at the nation-state level (Nilsen et al., 2017). This further complicates the task of reaching a definitive conclusion regarding the relationship between economic indicators and unemployment in an area as diverse, in terms of its institutional and economic frameworks. It also provides a full international background on issues pertaining to immigration patterns into developed countries. Third, whereas much of the material currently in print is based upon older datasets that are unlikely to accurately reflect changes within recent South Asian governmental and economic climates, using recent data from the World Development Indicators and Macrotrends through a fixed effects panel data model for 2001-2023 covering eight nations from South Asia will serve to fill out these gaps. This is a good means of offering effective longitudinal, regional-level analyses of the employment trends and supplies policymakers with current, relevant information.

Objectives

The core objective of this research is to figure out how the dynamics of employment relate with economic indicators in booming South Asian economies. This study shall try to understand how changing economic variables like GDP growth rate, inflation rate, FDI, government spending, and interest rate influence the magnitude of unemployment rates. Understanding the role of these important economic indicators can inform the causes of unemployment, as well as possible policy remedies. South Asia's heterogeneous economies are beset by specific challenges in realizing stable employment growth. The fixed-effects panel data model applied in this paper allows for a more complete analysis of economic variables affecting employment outcomes because it takes into consideration the variations within countries over time.

Research Questions and Hypotheses

1. To what extent do key economic indicators, such as GDP growth, inflation, foreign direct investment, GNI and interest rate influence unemployment rates in South Asian countries? This question addresses the research's primary objective, which is to examine the influence of fundamental economic indicators on unemployment. In the light of such linkages being considered, the research provides advanced understanding of how economic conditions and policy influence labor markets in South Asian emerging economies (Panth, 2014). This research is supported by the following hypotheses:

H1: The relationship between the GDP growth rate and the unemployment rate in South Asia's emerging economies is negative.

H2: The Rate of unemployment is quite Vulnerable to the Rate of Inflation and the Sign of This Relation May Change

Positively or Negatively with the State of the Economy and Level of Inflation.

H3: In Developing Economies Like South Asian Nations, the Lower the Rate of Unemployment, the Higher the Quantity of Foreign Direct Investment.

H4: The Rate of Unemployment and GNI are Negatively Correlated.

H5: In developing economies of South Asia, the rate of unemployment is positively related to higher rates of interest.

Model Specification

$$UNEMP_{it} = \alpha + \sum_{j=1}^5 \beta_j X_{j,it} + \epsilon_{it}$$

Where,

$UNEMP_{it}$ = Unemployment rate for country i at time t (dependent variable)

$X_{j,it}$ = Represents each independent variable

$X_{1,it} = GDP_{it}$: GDP Growth Rate

$X_{2,it} = INF_{it}$: Inflation Rate

$X_{3,it} = FDI_{it}$: Foreign Direct Investment

$X_{4,it} = GNI_{it}$: GNI Growth Rate

$X_{5,it} = IR_{it}$: Interest Rate

β_j : Coefficients for each economic indicator

α : Intercept term

ϵ_{it} : Error term for country i at time t

2. To what degree does population increase act as a demographic control on the relationship between unemployment and economic indicators?

This is a question to try and establish whether the growth of population and in what ways influences the relation between unemployment and economic indicators. Population growth is a demographic driver that generally remains important in most South Asian countries due to adding youth populations to the already increasing pressure on labor markets (Amornkitvikai et al., 2022). The hypothesis guiding this question is:

H6: Population growth dampens the impact of the unemployment rate on economic indices, which include inflation, FDI, government spending, growth in GDP, and the rate of interest.

Model Specification

$$UNEMP_{it} = \alpha + \sum_{j=1}^5 \beta_j X_{j,it} + \gamma POP_{it} + \sum_{j=1}^5 \delta_j (X_{j,it} \cdot POP_{it}) + \epsilon_{it}$$

Where,

$X_{j,it}$ = Represents each economic indicator: GDP growth, inflation, FDI, GNI and interest rate.

This model captures the way in which demographic considerations alter the relationship between economic

indicators and unemployment by including both main effects and interaction terms between each economic indicator and population growth.

3. How much do these economic links for the eight South Asian countries that were part of this study vary, especially once country-specific fixed effects are controlled for?

It is gauging the various degrees to which the economy connects eight countries in South Asia, with special attributes found uniquely for each country that may impact unemployment. The inclusion of fixed effects controls for those country-specific attributes. The study investigates whether these selected economic indicators represent consistent effects across the region or if there are differences across countries. The hypothesis on which this question is based is:

H7: Each nation is different, so the effect of economic indicators on unemployment will vary significantly among South Asian emerging nations.

Model Specification

$$UNEMP_{it} = \alpha_i + \beta_1 GDP_{it} + \beta_2 INF_{it} + \beta_3 FDI_{it} + \beta_4 GNI_{it} + \beta_5 IR_{it} + \gamma POP_{it} + \epsilon_{it}$$

Where α_i represents country, specific intercepts capturing time invariant characteristics unique to each other.

LITERATURE REVIEW

Theoretical Background

Economic theories tie employment outcomes, especially in developing countries, to various measures of macroeconomic performance. The most basic of the notions, called Okun's Law, assumes unemployment and growth in GDP move inversely; that is, a growing economy creates employment opportunities and decreases its level of unemployment. Although this relationship was initially derived based on developed nations, a number of researchers have assessed this relationship in emerging markets and the data indicates that the lower the level of unemployment, the higher the GDP growth (Haider et al., 2023). As such this relationship becomes particularly important in regions such as South Asia with rapidly growing populations because long-term GDP growth is required in order to absorb the large number of new entrants into the labor market (Hussaini, 2020). The Phillips Curve provides a theoretical relationship between inflation and unemployment where low unemployment is linked to moderate inflation. Supply shock, policy instability, and inflationary pressure are some of the variables observed by (Van Zandweghe, 2019) that have made labor market uncertainty quite common in emerging nations; therefore, this relationship might not be valid. High inflation has been proven to reduce real wage income and deter employment opportunities for the low-income people in South Asia (Ahmad et al., 2024). Another important economic variable considered to impact the employment levels is FDI. FDI can create jobs in a region where there is

low capital through capital influx, technological transfer, and growth of new industries (Nguyen-Huu & Pham, 2024). The local investments in the manufacturing industries are few; hence, it has increased this industry's employment, as shown by (Kaya, 2010). Also, though the impacts depend on the industry and country, FDI can contribute to emerging economies, in particular, by increasing productivity and developing high-skilled jobs (Su et al., 2024). According to Keynesian economic theory, government expenditure raises aggregate employment directly by increasing the demand for goods and services (Rendahl, 2016). This may lead to the creation of jobs in both public and private sectors due to multiplier effects. Empirically, this is supported by (Shonchoy, 2016), who indicate that government spending on social services and infrastructure has a particularly pronounced effect in emerging economies since it can boost both short-run employment and long-term economic growth. Monetary policy, especially changes in interest rates, affects employment indirectly through its consequences for borrowing costs. Low interest rates spur private sector investments that may, in turn, create jobs, argue (Asriyan et al., 2024). The latter may be squeezed if high interest rates deter investment in developing countries, hence squeezing the jobs to be created in capital-intensive industries. (Zahid et al., 2023) supports that maintaining interest rates at favorable levels is critical for sustaining employment in South Asia, given that access to cash is often limited.

Empirical Evidence

These theoretical links have been the foundation of empirical studies on the emerging economies, with, however, mixed results on the validity in the South Asian context. For instance, Okun's Law holds, according to the findings of (Ngubane et al., 2023), given that a rise in GDP significantly decreases the rate of unemployment in the South Asian and sub-Saharan economies. As (Butkus et al., 2023) observe, according to a comparative study done in South Asia, though GDP growth and job creation are correlated, there is variation in the degree to which this correlation occurs across countries due to differences in labor market flexibility, industry composition, and regulatory regimes. In emerging markets, inflation and employment exhibit some very complex relationship. (Mallick & Mohsin, 2010) found that high inflation often tends to adversely influence the economy through cost increases of firms and reductions in real wages, while moderate levels of inflation reduce unemployment, since the higher demand boosts employment. In line with these findings, (Siami-Namini & Hudson, 2019) also reported that the inflationary repercussions across South Asia indicated that high inflation indeed diminishes the purchasing power of the low-income earners, at least in those countries deficient in a strong wage uprating mechanism. FDI also widely researched the impact on employment dynamics. (Drahokoupil & Fabo, 2022) pointed out that foreign direct investment increases employment in Pakistan's

manufacturing sector through increasing its capacity to produce and encouraging skill development. Other than this, (Kathuria, 2019) estimated the relationship of FDI with jobs in South Asia and concluded that while FDI gives a boost to high-skilled job creation, its benefits are not equitably distributed across sectors, as manufacturing benefits more than agriculture. (Feliciano & Sun, 2016) indicated that in the case of India, there is a close linkage of FDI inflows with service industries employment—a fact that highlights the role of sectoral dynamics in governing the overall impact of FDI on employment. On the other hand, studies related to government spending have found a positive association with employment. (R. Safiullin et al., 2020) illustrate that the government expenditure, in particular, for infrastructure projects, creates employment opportunities due to the fact that it encourages direct employment and the development of the private sector. Having a focus on South Asia, (Michaillat & Saez, 2019) also validate that government expenditure on public projects leads to a decline in the unemployment rate in those countries where labor markets are dominated by the public sector. More importantly, as (Ohsawa & Yang, 2022) have cited, public spending in South Asia has spillover effects on the reduction of inequality and employment opacity, hence encouraging employment. Other important determinants of employment are the interest rates. According to (Y. Liu et al., 2022), low interest rates make investment in and expansion of private sector businesses easier, translating into higher levels of employment in the South Asian economies. (Matloob et al., 2023) asserted, in countries like Pakistan, where lending rates are in favor of SMEs' expansion, it becomes important for employment generation, particularly in most employment elastic industries.

Identified Gaps

But despite these findings, little is really known about the employment dynamics of South Asia as a whole. Many studies presently available focus either on individual countries or are of short-term analyses, which reduces the ability to generalize findings across the region and spot long-term trends. Most of the models fail to consider country-specific characteristics considered crucial determinants for employment. Hence, (Wang et al., 2024) outline that a region as diverse as South Asia calls for sophisticated panel models if one has to understand variation in employment concerning changes that take place within a country over some time. Also, the literature is based on many older datasets; therefore, it may not also be able to account for recent changes in the South Asian economy and policies. For instance, (Rüttenauer & Ludwig, 2023) note that more updated data with sophisticated techniques in econometrics are used, such as fixed effect models, which are more inclusive of country-specific elements and provide more accurate findings. It fills the gaps through the fixed effects panel model, hence enabling in-depth analysis of the trends in employment within the growing nations of South Asia.

DATA AND METHODOLOGY

The present study is based on panel data from the WDI, Trading Economics and Macrotrends, a comprehensive database maintained on a continuing basis by the World Bank. The WDI is ideal for this type of longitudinal study of developing economies because, for demographic, social, and economic data, it is one dependable and consistent source across countries and over time. Figure 1 will report data on a yearly basis between 2001 and 2023 for Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka-eighth countries of South Asia.

The dataset described includes several variables related to unemployment and economic indicators. The dependent variable, UNEMP, represents the unemployment rate, which is the percentage of the labor force that is unemployed and actively seeking employment. Several independent variables are considered in relation to this, including GDP, the growth rate of the economy, which is expected to have an inverse relationship with unemployment, meaning that higher GDP growth tends to reduce

unemployment. The INF, or inflation rate, reflects changes in general price levels and may have a varied effect on unemployment, as it can either increase or decrease depending on other economic conditions. FDI, or foreign direct investment, is expressed as a percentage of GDP and is anticipated to have an inverse relationship with unemployment, as higher levels of foreign investment can create more jobs. The GNI growth rate, which measures changes in gross national income, is also expected to reduce unemployment by boosting income levels and stimulating economic growth. Conversely, the IR (interest rate) is expected to have a positive relationship with unemployment, as higher interest rates tend to reduce investments and, by extension, job creation. The POP (population growth rate) is a control variable, as demographic pressures from a growing population can increase unemployment if job creation does not keep pace with population growth. All these data points are sourced from reputable organizations such as the World Development Indicators (WDI), Trading Economics, and Macrotrends.

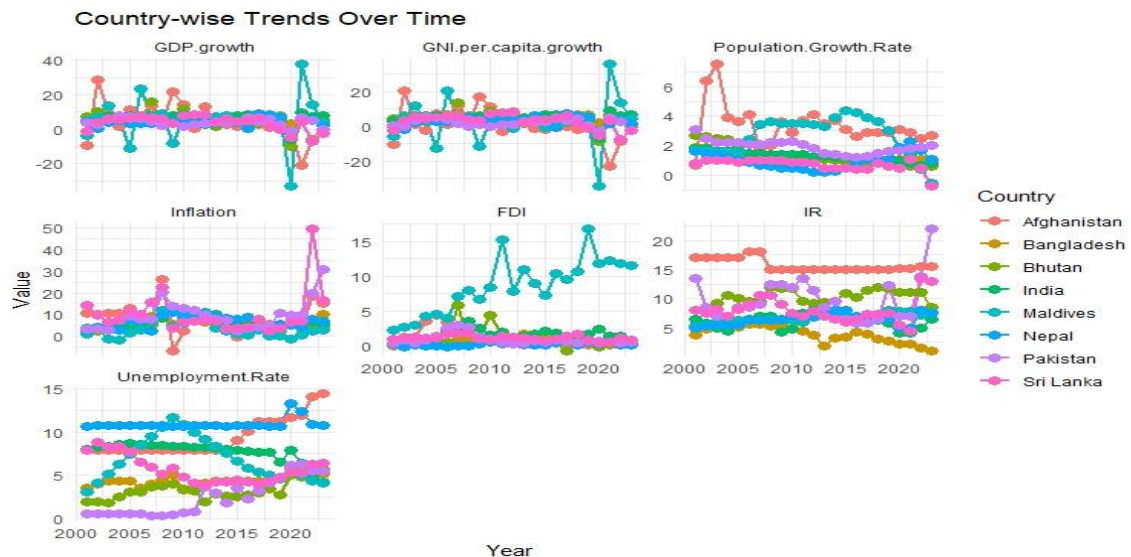


Figure 1 Country wise Trends over Time
Source: Author

Panel Data Model Selection

The present model estimates economic determinants for unemployment in South Asian nations using a Random Effects panel data model. Our model uses the Random Effects model: This assumes that the unobserved factors-institutional, cultural, and structural features at the national level-are uncorrelated with the regressors. This will give a broader understanding of how economic forces affect unemployment through different national settings, because both in-country and across-country variation can be accounted for. The fact that this is a model that includes country-specific variables while considering generally applicable relationships among economic variables means the Random Effects model allows detailed insight into the nature of unemployment in South Asia.

Estimation Approach

Panel data analysis was done using R and the plm package. Eight South Asian nations were included, from 2001 until 2023, by downloading information from the WDI, Macrotrends, and Trading Economics. Preprocessing procedures have been performed in a way that units and format of each variable are similar, in order not to break any analytical integrity and sample size. Where there were missing data, either deletion was done where necessary and imputation performed where practical. The Random Effects technique used the function plm with model = "random" for model estimate. Results can be trusted since robust standard errors had been used to account for intra-country serial correlation and possible heteroskedasticity. This adjustment reinforces the robustness of the estimates by considering the

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possible clustering effect that each nation has over time. Confirmatory tests of multicollinearity and heteroskedasticity were conducted to confirm the robustness of the model. This analysis reflected demographic pressures through the inclusion of the population growth rate as a control variable, while the respective coefficients for each economic indicator were interpreted in light of their single influence on the unemployment rate. This analytical approach considers both cross-sectional and temporal fluctuations; hence, it is an ideal framework for analyzing the impact of economic indicators on unemployment in South Asian emerging nations, thereby providing useful information to policymakers.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics of this table show large variation in all the economic indices across the South Asian countries of study. For example, the mean unemployment rate is 6.34%, varying from 0.4% to 14.4%, showing different labor market conditions. Similarly, while the average of GDP growth is 5.07%, the high variation from -32.9% to 37.7%

reflects large economic volatility, ranging from contractionary to expansionary periods. The dispersion in GNI growth is also very high in these countries, averaging 3.25% with a large standard deviation. The average inflation rate is as high as 6.93%, though inflation has actually deflated to as low as -6.8% and increased to as high as 49.7%, indicating periods of instability in the economy. Even while it averages only 1.92% of GDP, FDI varies between 16.78% and 1.92% to show varying levels of foreign participation in the economies. Whereas interest rates average 8.38%, there is considerable variation in borrowing costs, most probably due to disparate monetary policies in the region. With an average of 1.68%, the population growth rate varies between -0.7% and 7.5%, a situation that places some of the countries under immense demographic pressure. This can make the impact of employment creation to be felt differently among the concerned nations as shown in Table 1. These figures juxtaposed highlight economic diversity and volatility amongst South Asian rising nations collectively with implications for how each nation's labor market could react to these disparate economic conditions (Figure 2).

Table 1 The descriptive statistics

<i>Variables</i>	Mean	Minimum	Maximum	Standard Deviation
<i>UNEMP</i>	6.34	0.4	14.4	3.18
<i>GDP</i>	5.07	-32.9	37.70	6.35
<i>GNI</i>	3.25	-34.2	35.83	6.14
<i>INF</i>	6.93	-6.8	49.70	5.66
<i>FDI</i>	1.92	-0.64	16.78	2.98
<i>IR</i>	8.38	1.05	22.00	3.86
<i>POP</i>	1.68	-0.7	7.50	1.14

Source: Author

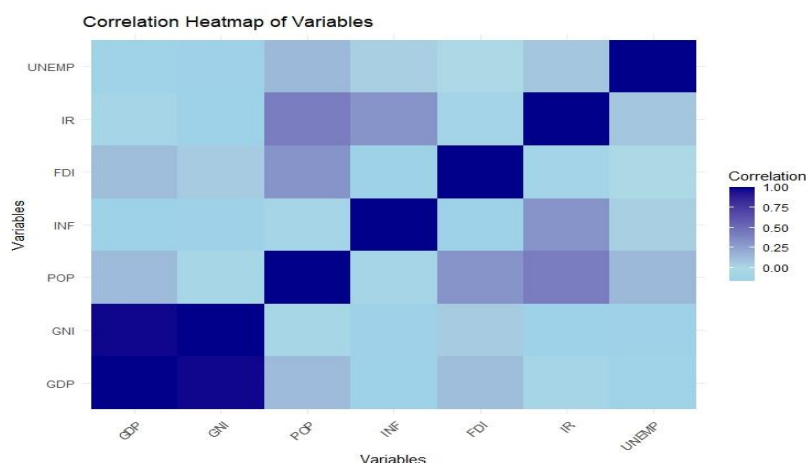


Figure 2 Correlation of variables

Source: Author

Random Effects Model Output

Table 1, where Random Effects estimation results with coefficients, standard errors, and significance levels of

each independent variable. Considering unobservable country-specific factors to estimate the within-country and between-country variation in fluctuations over time, the

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model therefore provides insights into the effect of economic indices on unemployment across South Asian countries. The coefficient for the growth rate of GDP is negative at -0.242372 but insignificant at $p = 0.1932$. This reflects that, though there is a general tendency to suggest that a decrease in unemployment may be associated with better GDP growth, in this sample, the association is not statistically significant. This hints that in as much as growth might be leading to job creation, structural or sectoral differences in such transmission mechanism may mean economic expansion by itself cannot always result in lowering unemployment across these diverse South Asian countries. The growth coefficient of GNI is positive but not statistically significant; its probability is 0.2938. This effect has not been statistically proven, but this upward trend may indicate that an increase in national income is not always related to lower unemployment and may even be associated with higher levels of unemployment. This might suggest that the highest levels of income do not always create a lot of jobs either because of the concentration of income or

Dependence on industries that have little capacity to create jobs. The coefficient of the inflation rate is positive and statistically significant, indicating that higher unemployment

is associated with higher inflation. This supports the hypothesis of inflationary pressures deterring labor performance, perhaps through higher costs which impede the expansion of business and hiring. This result has brought into light the importance of inflation control in sustaining job stability. FDI as a percentage of GDP is negatively coefficients at -0.080558 but is insignificant at $p = 0.2772$. This means that while FDI is still negatively related to unemployment, the relationship does not attain statistical significance. This insignificant result may be because of the variation in the magnitude of the impact of FDI across countries or industries, whereby the response of employment creation to FDI may be different. While the coefficient of the interest rate variable is significant statistically, or close to it at $p = 0.1007$, it is positive at 0.121135, which shows that increased borrowing costs are likely to be associated with higher unemployment. That supports the hypothesis that higher interest rates may restrain economic activity and, subsequently, investment that would undertake the creation of more jobs. This result implies that monetary policy may have far-reaching effects on the rate of employment via the lending rate (Figure 3).

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Residuals:
    Min.   1st Qu.   Median   3rd Qu.   Max.
-4.431683 -1.029180 -0.069414  0.761753  4.556746

Coefficients:
            Estimate Std. Error z-value Pr(>|z|)
(Intercept)  6.781342   2.152928   3.1498  0.0016337 **
GDP          -0.242372   0.186279  -1.3011  0.1932170
GNI           0.200563   0.191048   1.0498  0.2938074
INF           0.088610   0.025234   3.5116  0.0004455 ***
FDI          -0.080558   0.074142  -1.0865  0.2772457
IR           -0.121135   0.073796  -1.6415  0.1006973
POP           0.408563   0.252150   1.6203  0.1051646
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares:  470.25
Residual Sum of Squares: 413.34
R-Squared: 0.12102
Adj. R-Squared: 0.091221
Chisq: 24.369 on 6 DF, p-value: 0.0004466
    
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Figure 3 Output of Random effect model

Source: Author

Control Variable Impact: Population Growth Rate

Interaction effects show that the population growth rate moderates the relationship between unemployment and some economic indicators. However, the direct comparison of the population growth rate and unemployment shows a positive association but not significant at a statistical level. This infers that while there could be pressure in the labor market, especially in countries where the rate of population growth is high, on unemployment, the effect might not be

strong enough to stand alone at a statistically significant level. These variables, such as GDP growth, FDI, and interest rate, have different influences on unemployment with regard to the rate of population growth. Higher population growth, for instance, dampens the impact of interest rate and GDP growth and may also increase the bearing of FDI in reducing unemployment. It follows from our results that demographic factors indirectly influence employment outcomes through

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their impact on the way economic variables enter the labor market. In formulating focused employment policies catering to the special needs of countries with rapid

population growth, it is necessary that the policymakers consider both economic and demographic factors (See Figure 4).

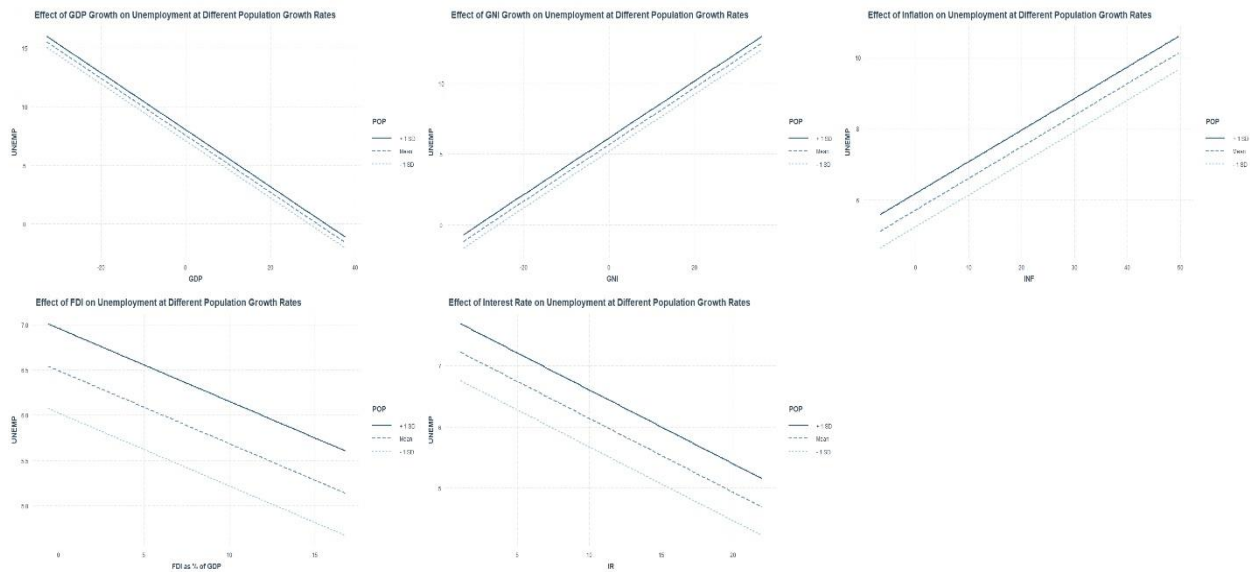


Figure 4 Control variable effect
Source: Author

Key Findings

The Random Effects model presents a number of significant relationships between unemployment and economic indicators within the South Asian countries. Even though GDP growth tends to decrease unemployment, its effect is not statistically significant, which means economic growth alone cannot be relied upon to engender employment on a sustainable basis in the region (Shah et al., 2019). Whereas the effect is not significant, FDI is also negatively correlated with unemployment, reinforcing the above idea that job-creation potential of FDI rests with specific industries or countries (J. Liu et al., 2024). Two other large drivers of unemployment are interest rates and inflation. Higher unemployment is associated with higher inflation, most likely due to cost pressures making it difficult for companies to hire and expand. The fact that higher interest rates translate into higher unemployment further reinforces the idea that high borrowing costs constrain investment and hence job creation (Eckstein et al., 2019; Panigrahi et al., 2020). Whereas the population growth rate itself is insignificant, it becomes a significant moderator. Interaction effects show how population growth increases the impact of other economic determinants on unemployment—noticeably increasing the power of FDI to decrease unemployment, while reducing the impact of interest rates and GDP growth (Neves et al., 2018; Palley, 2019). A fast-growing population may exacerbate or diminish the effects that economic policies have on employment—a fact that realizes the demographic concerns of the region. The implications for policy are very informative (Chen, 2017; Munir & Shahid, 2021). The strategies for addressing unemployment issues in South Asia

should hence focus on both the moderating influences of demographic trends and economic development-investment incentives. Well-rounded strategies support targeted public spending, limit inflation, and regulate interest rates—particularly in situations with rapid population increase—to greatly aid sustainable employment in the region (He et al., 2024; Maroof et al., 2019; Munir & Shahid, 2021).

DISCUSSION

These therefore, form the intricate connections between economic indicators of South Asia and unemployment, both in tune and at variance with other studies. In general, Okun's Law finds support, and also the findings of (Raies, 2023; Porrás-Arena & Martín-Román, 2023), as economic expansion tends to cut unemployment in South Asian economies as evidenced by the downward sloping trend of the link between GDP growth and unemployment. This would add weight to the supposition that growth-oriented policies could be very vital in reducing regional unemployment. However, the lack of statistical significance of this relationship may suggest that other factors dampen the influence of GDP growth on employment, which also calls for further research (Behera, 2015; Wang & Shao, 2022). In fact, Hall (2017) and Michaels et al., (2019) found that high borrowing costs may dampen investment and hence retard employment in the developing world, a relationship that was required by the positive level of interest rates with unemployment. Therefore, this study has underlined the need for easy access to finance to promote employment opportunities and enterprise development, especially for SMEs. This study also reports new facts regarding inflation

and FDI. While FDI is generally associated with lower unemployment, the coefficients are insignificant, which may indicate that the effects of FDI on employment in South Asian countries and sectors are heterogeneous (Alam et al., 2024; Firdos et al., 2024). Yuldashev et al., (2023) noted that benefits from FDI in the region often remain unevenly distributed, given that investment has focused on the manufacturing and service sectors rather than on agriculture. This could partly reflect their findings regarding heterogeneity. This could mean that such a sectoral focus pulls down the overall effect of FDI on employment and underlines the need for policies which direct foreign investment into more inclusive industries. Conclusively, there is a positive and significant relationship between inflation and unemployment, hence contradicting some other studies that argue that moderate inflation could increase employment through higher demand. The results of the present study are closer to those by Alemu (2024), who underlined that the impact of inflation on employment depends on the form of wage setting and the broader stability of the economy. High inflation might, therefore, push unemployment upwards, conceivably by reason of cost-push inflationary pressures as agents would be discouraged from hiring.

The linkages thrown up by this study provide a number of useful insights for South Asian Policymakers. Though the general trend of a negative link between GDP growth and unemployment, though not statistically significant, raises the possibility that policies promoting steady economic growth help in creating jobs (Maroof et al., 2019). Thus, targeted infrastructure spending, laws friendly to business, and support for industries with high elasticity of employment, such as manufacturing, could ensure maximum employment benefits from economic growth. On the other hand, the potential nexus of FDI with lower unemployment brings into focus that, despite diversity in FDI, the need is for rendition of an investment-friendly environment to attract foreign capital. The policymakers can ensure that foreign investments are targeted at industries with high employment generation, such as small-scale industries and agriculture, so that the employment gain from FDI is maximized (Uddin et al., 2024). That way, a greater percentage of the working population would feel the benefits of foreign capital. Interest rates and unemployment are positively correlated, implying that monetary policies aimed at keeping borrowing costs affordable are in order, more so for job-creating SMEs. Policymakers can stimulate hiring and business expansion by making reasonable credit options available and, in this way, further develop the labor market. A second major priority is tackling inflation: since high inflation always correlates with higher unemployment, policymakers should aim at maintaining moderate inflation levels that stimulate demand without destabilizing the economy (Gbadebo, 2023). It might also be further encouraged by the coordination of monetary

and fiscal policies that balance the stability of prices with economic growth. The population increase has a positive moderating effect which, though not significant statistically, shows demographic pressures on the labor market. This rapid population growth exaggerates or tones down the impact of different economic indicators. It, therefore, becomes very important to address policies that are purely demographic and tackle purely economic problems (Hopenhayn et al., 2022). Education, manpower development, and skills training are some interventions that are necessary in ensuring that the population able to enter the labor force can be given ample job opportunities.

Although this study gives much insight, there are a few limitations that need to be mentioned. The first is that this analysis may be constrained by the quality and availability of the data, particularly in nations with poor economic histories. Robustness of results might be impacted, as imputation has been used to fill missing data points; this is especially a problem whenever data gaps are large (Betti et al., 2024). The fact that this study also does not outline distinguishable sector-specific employment effects is also an oversimplification in establishing the linkage between unemployment and economic indicators. It could be expected that extending the dataset to more South Asian nations or studying employment trends in certain regions could overcome such shortcomings in the next research. Using sector-specific analysis, policymakers can then have focused policies for manufacturing, services, and agriculture, thus generating even more detailed insights. A deeper understanding of the employment dynamics in South Asia may also be secured through an examination of the impact of other factors, including trade policy and technological change (Gabardo et al., 2020). Expanding the scope of inquiry can further enhance research in these fields that is needed for effective policies to deal with employment in the region.

CONCLUSION

It then performs an analysis of the impact of vital economic factors such as GDP growth, inflation, foreign direct investment, GNI, interest rates, and population growth on unemployment within South Asian emerging economies from 2001 to 2023. These results suggest that while a growth in GDP would typically have the expected impact of reducing unemployment, the latter relationship is insignificantly small, suggesting that growth as such may not always be the principal cause of job creation in the area (Jui et al., 2024). By contrast, there are strongly positive associations between unemployment and inflation and interest rates, suggesting that labor demand could be dampened by inflationary pressures and expensive financing conditions. The latter effect of FDI to reduce unemployment is also not statistically significant. In other words, the general impact of FDI on employment is quite heterogeneous across industries and

countries (Ni et al., 2023). While the population growth rate had a very limited direct impact on unemployment, it had a significant moderating effect on how the other economic variables affect the labor markets—a fact which underlines the demographic challenge for South Asia. These results give a moderate view of the variables that affect unemployment, hence suggesting demographic and economic strategies as vital in ensuring employment in the long run (Amornkitvikai et al. 2022). The report provides insightful information to the authorities in South Asia who are keen to solve the issue of unemployment. Promotion policies for long-term economic growth—such as developing infrastructure, investing in human capital, and regulatory reforms—will spur business growth and thus are likely to be job-creating, given the tendency of the rise in GDP to lower unemployment. The role of FDI, even as it differs, brings to the fore the need for an enabling investment climate to attract foreign capital, especially in the manufacturing, small-scale business, and agriculture sectors with great job creation potentials (Bloom et al., 2021). Interest rates and unemployment go highly positive, hence the necessity of monetary policies able to keep the cost of borrowing at reasonable levels, above all for small and medium enterprises, which are the immediate jobbing employers. In the same vein, since excessive inflation may crowd out the purchasing power and put employment on unstable ground, especially among groups with low income, controlling it to preserve moderate levels is equally important. Finally, demographic issues have to be taken into consideration as well. It is not a direct cause of unemployment, but population growth most certainly makes other economic causes more noticeable. In order to counteract these demands, education, skill building, and work preparedness will be needed to absorb the rising labor force and the market demands. The rapid demographic expansion is affecting, along with regional advancements and worldwide economic trends, how the economy of South Asia is developing. These are the reasons why the twin issues of population increase and inclusive growth rest on such tender grounds in the region, and policymakers must institute measures that secure sustained employment and economic stability. They should be sector-specific policies that boost high-employment, growth-oriented businesses, such as manufacturing, technology, and green energy (Barnichon & Mesters, 2018). Of equal importance would be investments in education and vocational training that prepare the working population for the skills required in a modernizing economy. It is by overcoming such demographic and economic challenges that the South Asian economies can realize an adequate labor market condition to meet the long-term employment needs of the region for an equitable growth of the next generation.

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