

The Role of Population Growth and Political Instability in Youth Unemployment in Pakistan

Aiman Nadir¹, Wareesha Ayub², Muhammad Saqib³ and Shahid Munir⁴

<https://doi.org/10.62345/jads.2025.14.3.169>

Abstract

Youth unemployment is a critical challenge for Pakistan, with severe long-run effects for economic growth and social stability. This research analyzes the long-run impact of youth unemployment, GDP growth, population growth, and political instability on Pakistan's economy. In this study, we perform multiple diagnostic tests, including unit root tests, multicollinearity, normality, heteroscedasticity, specification bias, and autocorrelation, to assess the validity of the model. The Autoregressive Distributed Lag (ARDL) method is used to examine both the long- and short-run associations among variables. Findings of this research indicate that, as economic growth is inversely correlated with youth joblessness, sustained economic growth reduces youth unemployment in Pakistan; however, political instability & population growth show a direct and meaningful association with youth unemployment, imposing rising constraints on economic growth. This research provides key policy suggestions on the influence of economic growth & political volatility on the country's overall economic efficiency.

Keywords: Youth Unemployment; GDP Growth; Political Instability; Population Growth.

Introduction

Impact of youth unemployment on Pakistan's economy: as the world advances rapidly in technology, trade, and economic development, developing countries are still struggling with one of the most severe challenges: unemployment (Zemtsov, 2020). A large number of developing countries are facing a growing crisis of youth unemployment (ILO, 2023). Pakistan is one of the countries affected by unemployment, making it a critical area of concern for policymakers, economists, and researchers (World Bank, 2022). These challenges jointly have a significant impact on Pakistan's economy. High youth unemployment leads to a loss of productive human capital, reduces consumer spending, increases poverty rates, and puts pressure on government expenditure (Tahir et al., 2015). Furthermore, it contributes to social problems such as crime, brain drain, and political unrest, all of which further weaken economic stability (World Bank, 2022). Developed countries are establishing more opportunities and jobs for their young population. Employment is the backbone of any economy. When a country's population is effectively employed, it promotes national output, reduces poverty, and drives economic growth (Okun, 1962). In Pakistan, the employment sector is dominated by manufacturing, agriculture, and

¹Department of Economics, Government Postgraduate College Kohat, KP, Pakistan.

²Department of Economics Government Postgraduate College Kohat, KP, Pakistan.

³Department of Economics Government Postgraduate College Kohat, KP, Pakistan.

⁴Department of Economics Government Postgraduate College Kohat, KP, Pakistan.

Corresponding Author Email: shahidmunirshahid@gmail.com



services. According to the World Bank, Pakistan has a large labor force, yet the challenge of transforming it into productive employment remains significant (Imran, 2025). The country's employment structure is largely informal, with millions of workers engaged in low-wage, unprotected jobs that offer little stability or growth (Pakistan Bureau of Statistics, 2022). However, unemployment, particularly among the youth, has appeared as one of the most critical problems facing Pakistan today. Youth unemployment is defined as “the proportion of individuals aged 15 to 24 in the labor force who are currently seeking jobs but are unemployed” (ILO, 2023). In Pakistan, the youth unemployment rate has remained constantly high over the past two decades.

GDP is widely regarded as a primary indicator of a country's economic health. A growing GDP reflects increased production, higher employment opportunities, and improved living standards (Mankiw, 2019). But in Pakistan, GDP growth has remained unstable and volatile over the period 1995 to 2024, mainly due to structural flaws in the economy, energy crises, and external debt burdens (Javid & Arif, 2023). Some studies have established a strong relationship between GDP growth and unemployment: when GDP growth slows, job creation declines, thereby increasing youth unemployment (Khan & Hussain, 2022). Therefore, GDP growth is utilized in this research as the main independent variable to examine its impact on youth joblessness in Pakistan.

Population growth has significantly increased the supply of labor, while job creation has failed to keep pace (World Bank, 2023). Pakistan's population growth rate remains among the highest in South Asia, resulting in millions of young individuals entering the labor market each year without adequate employment opportunities (UNFPA, 2021). Political instability is another key factor influencing youth unemployment in Pakistan (Munir et al., 2026). Frequent changes in government, inconsistent economic policies, and a lack of long-term development planning have discouraged both domestic and foreign investment (Hyder, 2007). Without investment, industries cannot grow, and new jobs cannot be created.

Despite population growth and increases in per capita income, political instability remains a significant factor contributing to rising unemployment in the country. The country faces substantial brain drain due to limited employment opportunities, exacerbated by persistent political instability (Munir et al., 2026). Political instability is positively associated with unemployment, as it discourages investment, disrupts economic activities, and undermines business confidence. In contrast, political stability facilitates the implementation of long-term development projects and consistent policies, creating a favorable business environment that promotes employment and reduces unemployment. However, political instability discourages foreign direct investment (FDI), weakens business operations, and hampers economic growth, thereby increasing unemployment. This political uncertainty has directly constrained economic growth and worsened investment and unemployment levels over time (Malik, 2013).

Despite extensive research on unemployment in Pakistan, most existing studies have focused on either economic or political factors in isolation, without examining their joint effects on youth unemployment. Moreover, Limited studies have looked at GDP growth, population growth, and political instability as causes of youth joblessness in Pakistan. Most previous works have failed to employ the ARDL approach to capture both immediate and enduring effects. Consequently, the current study addresses this research gap by offering a multidimensional assessment of these variables and contributing significant new evidence to the literature. Therefore, the study makes a novel contribution to the literature and to policymakers on the effects of population growth and political instability on youth unemployment in Pakistan.

Literature Review

Developing countries are facing unemployment, particularly among youth. Youth unemployment has emerged as one of the most pressing socioeconomic challenges confronting developing nations in the twenty-first century (Imtiaz et al., 2020). It creates a significant hurdle to GDP growth, suggesting an inverse relationship between the two variables. Rapid population growth also contributes to youth unemployment. Youth unemployment has a long-run effect on economic growth due to political instability in the country. Arthur Okun introduced Okun's law in the 1960s, which highlights the empirical relationship between unemployment and fluctuations in GDP (Abbas, 2014). According to Imtiaz et al. (2020), the inability to adequately integrate young workers into the labor market results in severe and lasting economic consequences. The International Labor Organization defines youth unemployment as the percentage of the younger workforce (aged 15-24) who are both available for and actively seeking work but remain unemployed. In Pakistan, this rate has consistently ranged from 7 to 11 percent over the past two decades, indicating that the problem is structural rather than recurring (Pakistan Bureau of Statistics, 2022).

GDP and Youth Unemployment

ArslaArslan and Zaman (2014) examined or survey the unemployment determinant in Pakistan from 1999 to 2010 using econometric model which is OLS regression and confirmed Arslan and Zaman (2014) examined or survey the unemployment determinants in the strong negative or inverse effect of GDP growth on unemployment. The authors concluded that slow economic growth, inadequate private-sector investment, and the dominance of low-productivity agriculture were the primary structural drivers of persistent youth unemployment. Their econometric analysis shows that a 1% increase in GDP growth is associated with a short-term reduction of nearly 0.6 percentage points in the unemployment rate. As (2014) examines the long-run effect of GDP growth on unemployment in Pakistan (a developing country), using the Johansen cointegration test, and finds a two-way causal relationship: low growth worsens unemployment, while high unemployment itself hinders future GDP growth through decreased consumption and aggregate demand. This feedback loop emphasizes the compounding economic cost of persistent youth joblessness on Pakistan's long-term development trajectory.

Population Growth and Youth Unemployment

Population growth is among the most significant structural causal factors of unemployment in developing countries, as reflected in Pakistan's economic literature. Arslan and Zaman (2014) established, through linear regression, a positive and statistically significant association between population expansion pace and unemployment levels, concluding that accelerating population growth also increases the labor supply, surpassing the nation's absorption capacity. Pakistan's annual population growth rate of approximately 2.0 percent translates into over 3.5 million new entrants into the labor force each year (Pakistan Economic Survey, 2022–23), a figure that far outpaces the economy's capacity to create formal employment. iaz et al. (2020), in a comprehensive study of youth unemployment determinants across four Pakistani provinces and two administrative territories, identified rapid population growth as a key upstream structural driver of the labor surplus. Their findings demonstrated that rapid population growth (overpopulation) depletes public resources allocated to education, such as health and infrastructure, decreasing the quality of human capital produced and further widening the gap between labor supply and productive employment demand. The authors also concluded that population management and economic

growth must be pursued simultaneously to have any meaningful impact on youth unemployment (Munir et al., 2026).

Political Instability and Youth Unemployment

Political instability is a constitutionally embedded, yet frequently underestimated determinant of youth unemployment in Pakistan. Iqbal and Nawaz (2010), using Pakistani time-series data, confirmed that political instability significantly slows both domestic and foreign investment inflows, thereby directly undermining employment generation. Their investigation found that political disturbances trigger capital outflows and erode business confidence, leading firms to cut hiring, which disproportionately affects young, first-time job seekers who lack professional networks and accumulated work experience. Unique (2021), using an ARDL model, confirmed that macroeconomic instability embedded in political uncertainty has a deep and robust negative impact on GDP and employment in Pakistan. The cointegration results confirmed or established a long-term equilibrium relationship among political instability, unemployment, & economic output, indicating that political governance is not merely an institutional variable but an essential economic determinant. Imtiaz et al. (2020) similarly identified political instability as one of the top structural determinants of youth unemployment in their regression analysis, alongside overpopulation and an education system mismatch.

Research Methodology

Data and variables

The study uses annual time-series data for Pakistan over the period 1994-2024. The World Development Indicators (WDI, 2025) were used as the primary source to calculate the variables. The core objective of this analysis is to examine future youth unemployment and its long-term impacts on Pakistan's economy. Here, the unemployment rate serves as the dependent variable measured as a percentage of the total labor force (Maqbool et al., 2013). Three variables, political instability, population growth, and GDP growth, are used as independent variables. Political instability is captured through the Political Stability and Absence of Violence/Terrorism index, while population growth and GDP growth are measured as annual percentage changes (Ahmed & Khan, 2018; Maqbool et al., 2013). Descriptions of all variables, observations, and data sources are presented in Table 1.

Table 1: Variable Descriptions

Variables.	Abb:	Description	Sources
Unemployment	UNEMP	Unemployment has been measured by (%of total labor force)	(WDI,2025)
GDP	GDP	GDP growth has been measured by GDP growth (annual %)	(WDI,2025)
Political instability	POLI	Political instability has been measured by (political instability and absence of violence/terrorism)	(WDI,2025)
Population growth	POPG	Population growth has been measured by population growth (annual %)	(WDI,2025)

Estimation Techniques

Time-series data could have several econometric problems such as unit root, normality, heteroscedasticity, multicollinearity, model specification and autocorrelation problems. Therefore,

to ensure the reliability of the findings in this study, several diagnostic tests have been used. Firstly, Augmented Dickey–Fuller (ADF) test was applied to examine the stationarity properties of the variables and to determine whether the series exhibit mean-reverting behavior. Following this, to assess the distributional properties of the residuals, the Jarque–Bera test was utilized to confirm normality. Furthermore, the Variance Inflation Factor (VIF) was calculated to detect potential multicollinearity among the explanatory variables. To address issues related to variance and error terms, the Breusch–Pagan test was employed for heteroscedasticity, while the Breusch–Godfrey LM test was used to identify any Serial Correlation in the residuals. Lastly, the Ramsey RESET test was performed to verify the functional form and ensure the model is free from specification errors.

Econometric Model

$$UNEMP = \beta_0 + \beta_1 PI + \beta_2 POPG + \beta_3 GDP + u$$

In the above model the β_0 is intercept, and β_i is slope coefficient and u_i is error term.

Results and Discussion

The outcomes of the Augmented Dickey–Fuller (ADF) unit root test, as presented in Table 2, show a mixed order of integration among the variables. Particularly, the youth unemployment rates, the total population growth rate were found to be non-stationary at their levels $I(0)$. However, after taking the first difference both series obtained stationarity showing that these variables are integrated of order one $I(1)$. But political instability and GDP growth revealed stationarity at their levels with statistically significant t-statistics approving they are integrated of order zero $I(0)$. This combination of $I(0)$ and $I(1)$ variables validates the suitability of the ARDL Bound testing approach for this research.

Table 2: ADF Test Results

Variables	Level t – statistics	Level prob	1 st diff t – statistics	1 st diff prob	Result at 1 st diff	Order of integration
UNEMP	-1.88	0.33	-4.59	0.00*	Stationary	I(1)
GDP	-4.19	0.00*	—	—	—	I(0)
POLI	-2.89	0.06***	—	—	—	I(0)
POPG	-0.77	0.81	-3.60	0.01*	Stationary	I(1)

*, **, *** represents 1%, 5%, and 10% respectively.

To confirm the accuracy of the computed model, multiple diagnostic tests are applied. The Jarque–Bera normality test shows an F-statistic of 1.74 with a corresponding p-value of 0.42, show that the disturbance term is normally distributed. Regarding the variance of the error terms, the heteroscedasticity test produced a p-value of 0.57, showing that the model is free from non-constant variance issues. Similarly, the Breusch–Godfrey LM test for serial correlation indicated a high p-value of 0.85, signifying the absence of autocorrelation in the residuals. Finally, the Ramsey RESET test also verified the correctness of the model, as the p-value of 0.18 shows no evidence of specification bias. The results are tabulated in Table 3.

Table 3: Results of Various Diagnostic Tests

Test	F-Statistics	P-value	Conclusion
Normality test	1.74	0.42	Residuals are normally distributed
Heteroskedasticity	0.82	0.57	No heteroscedasticity
Autocorrelation	0.17	0.85	No Autocorrelation
Specification Bias	1.86	0.18	Model is correctly specified

Moreover, the result of multicollinearity is depicted in Table 4. The multicollinearity between the independent variables is studied using the Variance Inflation Factor (VIF). The centered VIF values political instability (1.07), GDP growth (1.03), and population growth (1.04) lies below the 10. This shows that multicollinearity is not a problem in the model & computed values are accurate.

Table 4: Result of Multicollinearity

Variable	Coefficient	Uncentered VIF	Centered VIF
GDP	0.04	4.95	1.03
POLI	0.43	17.91	1.07
POPG	0.49	18.46	1.04
C	6.86	49.90	NA

ARDL Bound Test Results Interpretation

The results from the ADF test revealed a mixed order of integration between the variables providing a strong justification for employing the Autoregressive Distributed Lag (ARDL) framework as proposed by Pesaran et al. (2001). This methodology is notably effective when analyzing variables integrated at both $I(0)$ and $I(1)$ levels, facilitating a comprehensive exploration of both short-run dynamics and long-run equilibrium. Empirical results show that the calculated F-statistic of 7.57 significantly exceeds the upper-bound significant values at the 1%, 2.5%, 5%, and 10% significance levels. This result indicates an important long-term cointegration association among youth unemployment, GDP growth, population growth, and political instability. Therefore, the null hypothesis which suggests no long-run interaction is declined, confirming that these factors are interconnected in the long run. Thus, using the ARDL approach is suitable for further analysis. The results of the ARDL Bound Test are shown in Table 5.

Table 5: ARDL Bound Test Results

Test Statistic	Value	Sig:	I(0)	I(1)
F-statistic	7.57	10%	3.47	4.45
K	3	5%	4.01	5.07
		2.5%	4.52	5.62
		1%	5.17	6.36

The long-term findings of the ARDL model are presented in Table 6. These findings suggest that GDP growth positively influences youth unemployment significantly over time. Specifically, the coefficient of 5.65 shows that a one-unit increase in GDP growth is associated with a rise in youth unemployment, assuming all other factors remain constant. Moreover, political instability (POLI) reveals a substantial positive impact on youth unemployment. With an estimated parameter of 9.67, it highlights that greater political instability facilitates increasing youth unemployment rates in the long term, reflecting its negative influence on job availability. This data also reveals that population growth (PPG) significantly affects youth unemployment, with a coefficient of 21.56 indicating that rapid population increase places added pressure on the labor market, resulting in a

higher youth unemployment rate over a period. Lastly, the constant coefficient is statistically reliable, showing that other factors affecting youth unemployment are at play, even if they are not directly included in the formulation.

Table 6: ARDL Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-5.65	1.72	3.29	0.01
POLI	9.67	1.95	4.96	0.00
PPG	21.55	6.37	3.38	0.01
C	67.98	23.86	-2.85	0.01

After analyzing the long-run association, we moved on to the error correction mechanism (ECM) to evaluate the short-run adjustments. The findings reveal that the lagged changes in youth unemployment are negatively and statistically relevant, showing changes in unemployment levels over time. Temporarily, economic growth plays an important role in determining youth unemployment. Especially, upward trend in GDP growth is associated with a decrease in youth joblessness, whereas some lagged values show a temporary positive impact on employment conditions. This suggests that economic growth affects youth unemployment in different ways during the short run. Furthermore, the data analysis demonstrates that present political instability exerts a significant negative impact on youth unemployment, whereas its lagged values do not apply a meaningful affect, suggesting that political factors mainly impact unemployment in the present context. On the other hand, population growth seems to have a weak and empirically insignificant effect in the short run, indicating limited immediate influence on youth unemployment. Notably, the error correction term (CointEq-1) is both adverse & statistically relevant, verifying the existence of a long-term relationship among the analyzed components. The estimated value of 0.79 shows that nearly 79% of any short-run distortion is corrected annually, demonstrating a relatively swift movement toward long-run equilibrium. The short-term ARDL results are given in Table 7.

Table 7: ARDL Short-Run result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(UNEMP(-1))	-1.83	0.47	-3.88	0.00
D(UNEMP(-2))	-1.04	0.36	-2.87	0.02
D(GDP)	-0.65	0.19	-3.36	0.01
D(GDP(-1))	1.21	0.31	3.84	0.00
D(GDP(-2))	0.79	0.21	3.63	0.01
D(GDP(-3))	0.83	0.28	2.87	0.02
D(POLI)	-4.84	1.56	-3.09	0.01
D(POLI(-1))	-1.10	0.92	-1.21	0.26
D(POLI(-2))	-1.03	1.08	-0.94	0.37
D(PPG)	5.61	4.27	1.31	0.22
D(PPG(-1))	7.86	5.33	1.47	0.17
D(PPG(-2))	10.29	5.13	2.00	0.07
CointEq(-1)	-0.79	0.34	2.32	0.04

Conclusion

This research study examined the influence of GDP growth, political instability & population growth, and on youth unemployment in Pakistan is studied using yearly data from 1994 to 2024. The ARDL method is used to check how these variables affect each other in the short-run fluctuations and long-run equilibrium. The analysis reveals a statistically robust association between youth unemployment and these macroeconomics determinants in Pakistan. In long run, economic growth negatively correlated with youth unemployment, showing that stronger economic growth helps reduce youth joblessness among young people in Pakistan. In contrast, political instability & population growth is directly associated with youth unemployment, showing that rapid population growth and political instability increase unemployment between young people and create more pressure on the labor market. These results show the importance of stable economic and political environments for improving employment opportunities. However, in short run GDP growth indicates a direct relationship with youth unemployment, while political instability and population growth continue to exert pressure on labor market and the effect of these variables continue to influence youth unemployment. The error correction term (ECT) -0.79 relatively swift adjustment toward long-run stability, with about 79% of imbalance corrected in each period. Overall, this study concludes that youth unemployment in Pakistan is strongly influenced by economic growth, political condition and population pressure. Therefore, the findings provide useful insights for policymakers that promotes youth employment, reducing unemployment and improving long-term economic development in Pakistan.

Policy Recommendations

The policies suggested will include the following: First, the Government of Pakistan ought to invest further in ensuring that the economic growth is sustainable to alleviate unemployment among the young generation. Good growth of the economy promotes investment, growing business and the creation of jobs, which would offer more job opportunities to the youth within the labor market. Thus, industrial development, entrepreneurship, and investments in industry should be promoted by appropriate policies. Second, population growth was observed to put strain on the labor market; thus, there is need to have good population management policies. It is necessary that the government enhances family planning initiatives, creates awareness, and increases both access to education and health services as a way of controlling the high rate of population growth and the strain it exerts on the available employment. Third, political stability is one of the elements ensuring attraction of domestic and foreign investment. The policymakers ought to ensure that they enhance governance and institutional performance as well as ensuring that there is a stable political environment. A stable political regime can be more beneficial to boost investor confidence, promote economic activities and finally create more job opportunities to the youth. Lastly, entrepreneurship and support of (SMEs) by the government should be encouraged using financial aid, training courses, facilitation of business laws and skills development programs to enhance the employability of the youths. These efforts can support self-employment, raise economic engagement and finally decrease unemployment among the youth and contribute to economic progress in the long run in Pakistan.

References

- Abbas, K. (2014). Unemployment and economic growth in Pakistan: A time series analysis. *The Pakistan Development Review*, 53(2), 99–114.

- Abbas, S. (2014). Long-term effect of economic growth on unemployment level in case of Pakistan. *Journal of Economics and Sustainable Development*, 5(11), 103–108. Retrieved from <https://scholar.google.com>
- Ahmad, A., & Khan, F. (2018). Investigating the determinants of youth unemployment in Pakistan. *Pakistan Journal of Humanities & Social Science Research*, 1(1), 1-12.
- Ahmed, M., & Raza, A. (2012). Skills mismatch and youth unemployment in Pakistan. *Journal of Economics and Sustainable Development*, 3(6), 45–53.
- Arslan, M., & Zaman, K. (2014). Determinants of unemployment: A case study of Pakistan economy (1999–2010). *Abasyn Journal of Social Sciences*, 7(1), 83–95.
- Arslan, M., & Zaman, R. (2014). Unemployment and its determinants: A study of Pakistan economy (1999–2010). *Journal of Economics and Sustainable Development*, 5(13), 20–24. <https://core.ac.uk/download/pdf/234646459.pdf>
- Breusch, T. S., & Godfrey, L. G. (1978). Testing for serial correlation in least squares regression.
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica: Journal of the econometric society*, 1287-1294.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a Econometrica, 46(6), 1509–1520.
- Farooq, S. (2011). Occupational mismatch and labour market outcomes: Evidence from Pakistan. *The Pakistan Development Review*, 50(3), 317–339.
- Government of Pakistan. (2023). *Pakistan economic survey 2022–23*. Finance Division, Government of Pakistan.
- Hyder, A. (2007). Declining wages and political instability in Pakistan: An empirical analysis. *Pakistan Economic and Social Review*, 45(1), 1–20.
- Hyder, A.. (2007). Preference for private sector jobs and political uncertainty in Pakistan. *The Pakistan Development Review*, 46(4), 593–606.
- Imtiaz, S., Ali, A., Khan, Z., Ullah, M., Khan, M., & Jacquemod, J. (2020). Determinants of youth unemployment in Pakistan. *International Journal of Economics and Financial Issues*, 10(5), 171–177. <https://doi.org/10.32479/ijefi.10139>
- Imtiaz, S., Khan, M. A., Ahmad, S., & Ali, R. (2020). Determinants of youth unemployment in Pakistan: Evidence from provincial data. *Pakistan Journal of Applied Economics*, 30(1), 45–63.
- International Labour Organization (ILO). (2023). Global employment trends for youth 2023. ILO Publications. <https://www.ilo.org>
- International Labour Organization. (2023). *Global employment trends for youth 2023: Investing in transforming futures for young people*. International Labour Organization.
- Iqbal, N., & Nawaz, S. (2010). Political instability and economic development: Pakistan time-series analysis. MPRA Paper No. 34346. University of Munich. <https://mpra.ub.uni-muenchen.de/34346/>
- Iqbal, Z., & Nawaz, S. (2010). Political instability and economic performance in Pakistan. *Journal of Political Studies*, 17(2), 67–82.
- Jarque, C. M., & Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics letters*, 6(3), 255-259. *Journal of the Royal Statistical Society Series B: Statistical Methodology*, 31(2), 350-371.
- Javid, M., & Arif, U.. (2023). Economic growth, debt burden and macroeconomic instability in Pakistan. *Pakistan Economic and Social Review*, 61(1), 1–22.
- Khan, S., & Hussain, A.. (2022). GDP growth and unemployment nexus in Pakistan: An empirical investigation. *Journal of Economic Studies*, 49(4), 567–582.
- Malik, A.. (2013). Political instability and economic growth in Pakistan. *Pakistan Journal of Social Sciences*, 33(2), 329–344.
- Malik, S. J. (2013). Employment, growth and poverty in Pakistan. Pakistan Institute of Development Economics (PIDE).

- Mankiw, N. Gregory. (2019). *Principles of economics* (9th ed.). Cengage Learning.
- Maqbool, M. S., Mahmood, T., Sattar, A., & Bhalli, M. N. (2013). Determinants of unemployment: Empirical evidences from Pakistan. *Pakistan Economic and Social Review*, 191-208.
- Munir, S., Bibi, H., & Khattak, K. (2026). Do Remittance Reduce Poverty? The Role of Education, Inflation, And Unemployment. Time Series Evidence from Pakistan. *Advance Journal of Econometrics and Finance*, 4(1), 1787-1795.
- Munir, S., Safdar, S., & Abdullah, M. (2026). The Role of Inflation, Per Capita Income and Education on Household Consumption in Pakistan. *Advance Journal of Econometrics and Finance*, 4(1), 1807-1813.
- Munir, S., Shiekh, M. W., Khan, A., Bibi, H., & Jan, W. U. (2026). Impact of Market Capitalization, Market Size, Liquidity and Investment in Economic Performance of Pakistan. *Advance Journal of Econometrics and Finance*, 4(1), 742-748.
- Munir, S., ul Haq, I., & Khan, A. (2026). The Role of Globalisation and Governance in Income Inequality: An Empirical Study for Pakistan. *population*, 4(2).
- O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & quantity*, 41(5), 673-690.
- Okun, A. M. (1962). Potential GNP: Its measurement and significance. *Proceedings of the Business and Economic Statistics Section of the American Statistical Association*, 98-104.
- Pakistan Bureau of Statistics (PBS). (2022). Labour force survey 2021-22. Government of Pakistan. <https://www.pbs.gov.pk>
- Pakistan Bureau of Statistics. (2022). Labour Force Survey 2020-21. Government of Pakistan. <https://www.pbs.gov.pk>
- Pakistan Economic Survey 2022-23. (2023). Ministry of Finance, Government of Pakistan. <https://www.finance.gov.pk>
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, 16(3), 289-326.
- Rafique, M. Z. (2021). An economic impact of political instability: Evidence from Pakistan. *Journal of Political Studies*, 28(1), 1-15. <https://www.academia.edu/71295306>
- Ramsey, J. B. (1969). Tests for specification errors in classical linear least-squares regression analysis.
- Shah, S. Z. A., Shabbir, M. R., & Parveen, S. (2022). The impact of unemployment on economic growth in Pakistan: An empirical investigation. *iRASD Journal of Economics*, 4(1), 78-87. <https://ideas.repec.org/a/ani/irdjoe/v4y2022i1p78-87.html>
- Tahir, M., Asghar, N., & Nasreen, S.. (2015). Impact of economic factors on unemployment in Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 5(1), 103-115.
- Unique, N. (2021). Political instability, unemployment, and economic growth in Pakistan: An ARDL approach. *Journal of Economic Studies*, 48(4), 765-782.
- United Nations Population Fund. (2021). *State of world population 2021: My body is my own*. UNFPA.
- WDI. (2025). World Development Indicators. Available online; <https://databank.worldbank.org/source/world-development-indicators>. Accessed on December 25, 2026).
- World Bank. (2022). *Pakistan development update: Economy at a crossroads*. World Bank.
- Zemtsov, S. (2020). New technologies, potential unemployment and 'nescience economy' during and after the 2020 economic crisis. *Regional Science Policy & Practice*, 12(4), 723-743. <https://doi.org/10.1111/rsp3.12286>