Determinants of Unemployment in Pakistan: A Time Series Analysis (1988-2018)

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Abstract: The present study has been conducted to find out the most responsible factors having an impact on the unemployment in Pakistan for the period of 1988-2018. The explanatory variable in the study were Population Growth, Gross Domestic Product (GDP), Inflation, Education Level and Foreign Direct Investment. Data were analyzed by employing g Augmented Dickey Fuller (ADF) test, correlation and Ordinary Least Square (OLS) method. The results of correlation show that Population growth has a positive and significant relation with the unemployment rate while GDP, Education, Inflation and FDI shows negative relation with unemployment. Findings of the Regression analysis revealed that population growth has positive and significant effect on unemployment while GDP, Education level and FDI shows negative but significant effect on the unemployment. However, Inflation shows negative and insignificant effect on unemployment.

Keywords: Population Growth, GDP, Literacy Rate, Inflation, Foreign Direct Investment (FDI), Unemployment, Correlation and Regression.

INTRODUCTION

One of the most critical issue of developing and under developed countries in the world is unemployment. High rate of unemployment means that the peoples are not getting jobs according to their ability and desire and hence resulting the wastage of the human resources. According to Keynes(1936) define "Unemployment is the access supply of labor resulting from a failure in market economy" International Labor organization (2011) define it as "Unemployment is a situation of being out of work or need a job continuously searching for it in the last four week or unemployed (age 16 or above) but available to join work in the next two weeks, people who voluntarily don't want to work, full time students, retired people and children are not included in in the unemployment category" According to IMF report (1998) "Unemployment is measured annually as a percentage of the labor force that can't find jobs"

Unemployment is becoming a headache for Pakistan economy. There is a theatrical rise in the rate of unemployment in Pakistan. The unemployment rate rose in 1990s as a cause of fiscal constriction, low rates of economic growth and due to some other factors in Pakistan (Akhtar &

Shahnaz, 2005). It gives birth to a number of social problems in the country, that are crimes, Poverty, Corruption etc (Hussain et al., 2010). The unemployment also results in some psychological problems of hopelessness, frustration aggression & gradual drift of some visible unemployed youth into all manner of criminal behavior (Khan and Yousaf, 2012). There are numerous factors that affect the unemployment rate in Pakistan. Various studies have been conducted to comprehend the elements of unemployment in Pakistan, though there still exist a need to find out the associations of all these factors with one another.

LITRATURE REVIEW

Population growth and Unemployment

One of the most important factor which severely affect the unemployment level in Pakistan is the population growth. It is assumed that the population growth has a positive impact on the level of unemployment in Pakistan. Rafiq et al. (2010) conducted a research study to analyzed the relationship between population growth and unemployment level using the data for the period of 1998-2008. Finding of the study showed that population growth has a positive impact on the level of unemployment in Pakistan. Another study is conducted by Mehmood et al (2011) to find the correlation between the two variables in district Peshawar, Pakistan. The results of the study showed that high growth rate of population has a significant impact on rate of unemployment. Adewale, (2011) studied the reasons of unemployment in urban areas of Nigeria. The researcher found that the high growth rate of population is one of the main determinant of unemployment in Nigeria.

GDP growth and Unemployment

Another important determinant of the unemployment is economic Growth, which play an important role in reducing the level of unemployment of the country. The relationship between the two variables is assumed to be negative (Fanati and Manfredi 2003). Kalim (2011) analyzed the impact of unemployment on GDP by using the time series data and found a negative relationship between unemployment and GDP. According to okum,s law there is an inverse relationship between the Gross Domestic

Product(GDP) and unemployment (Malley and Malana 2007). Many research studies have been conducted by the different researcher to prove the okum,s law in different countries of the world, in which some researcher shows negative relationship and some shows positive relationship between the two variables .Izyumove and vahulay (2002) claimed that there is a positive relationship between the two variables.

Inflation and Unemployment

Inflation is another major determinant of unemployment. It is assumed that inflation rate has a negative relationship with rate of unemployment. Philips identified an inverse relationship between the two variables since 1958, but most of the literature on the relationship between the two variables is positive. For example, Bayers and Frances (2007) found a positive but insignificant relationship between the two variables. Umaru and Zubairu (2012) explored the correlation between inflation and unemployment in Nigeria by using Johansen Co-integration method and Grange Causality test. The findings showed that there was negative relationship between inflation and unemployment in Nigeria. Zaman et al (2011) examined the existence of the Phillips curve in Pakistan.by using Granger Causality test. The results showed that there is causal and the long run relationship between unemployment and inflation in Pakistan.

Education and Unemployment

Education level of a country is also a responsible factor for the low level of employment. Qayyum and Siddiqui (2007) identified that the level of unemployment in khyberpaktunkhwa, Pakistan is mainly affected by the education level, early marriages, low wages and government policies. The finding of the study shows a positive and significant relation between the education level and rate of unemployment. Similarly, another study is conducted by faridi et al.,(2010) to examine the effect of education on unemployment in Bahalpur, Pakistan. The finding of the research study revealed that the education, experience and health has a perfect positive relationship with unemployment that is higher the education level, higher will the level of employment.

Foreign Direct Investment(FDI) and Unemployment

Foreign Direct Investment (FDI) is another crucial determinant of unemployment. FDI can affect the employment level by means of transferring technology. Nunnenkamp et al., (2007) attempted to find the relationship between FDI and unemployment by collecting the data of 200 manufacturing firms. The results of the study showed a negative and significant correlation between unemployment and FDI. Akhtar and Ozturk (2009) in their study aimed to investigate the relationship between the FDI, GDP and rate of unemployment in Turkey for the period of 2000-2007. Their study revealed that FDI has a negative relationship with unemployment however GDP has an insignificant but positive relationship with the rate of unemployment. Their study suggest that the export should be increased by Turkey to increased FDI.

RESEARCH METHODOLOGY

The research study is based on the secondary data collected from the World Bank, IMF, various issues of Economic survey of Pakistan and website of stat bank of Pakistan for the period of 1988-2018. The explanatory variables of the study are Population Growth, Gross Domestic Product, Rate of inflation, Literacy rate and Foreign Direct Investment while the dependent variable is rate of unemployment. Advanced analytical tools of Econometric were used to analyze the impact of explanatory variables on the predicted variable.

A Multiple Linear Regression Model is used to to examine the variations in the rate of unemployment in Pakistan. The functional form of the model is as:

$UNemp = f(Pop \ GR, \ GDPGR, \ INFLR, \ LR, \ FDI)$

Where

UN = Unemployment rate, $Pop \ GR$ = Population growth, GDP = Gross domestic product growth INFLR = Inflation Rate, LR = Literacy Rate (millions), FDI = Foreign direct investment **RESULTS AND ITS INTERPRETATION**

Unit Root test

To avoid the chances of spurious regression, Augmented Dicky-Fuller (ADF), This study used Augmented Dicky-Fuller were employed for removing the serial correlation problem. The results are presented in table I

Table I

Variables	At level(0)		At first Difference(I)		
	t-statistics	Critical value (5%)	t-statistics	Critical value (5%)	
PopGR	-2. 4581 (0. 6238)	-2.9458	-2. 2313 (0. 001)	-2.9484	

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GDPGR	-0.2013	-2.9143	-4.1942	-2.9122
	(0.2391)		(0.000)	
INFR	-1.9872	-2.8459	-7.2360	-2.9484
	(0.1132)		(0.004)	
LR	-2.4710	-2.9468	-7.1660	-2.7584
	(0.4981)		(0.003)	
FDI	-0.8762	-2.9457	-3.9075	-2.9284
	(0.1178)		(0.001)	
UNemp	-1.4561	-2.7658	-7.1660	-2.9483
	(0.4567)		(0.002)	

Source: Researchers own calculation

All the required variables are stationary at first difference (table I), so there is no problem of different level of stationary. Therefore, we can go for the regression analysis to examine the predicting character of explanatory variables.

Correlation Results

It can be observed from the table II that GDP growth, FDI, education level shows a negative and significant relationship with population growth, However, population growth shows strong and significant while Inflation shows weak positive and insignificant relationship with unemployment.

		UNemp	Pop G	GDP	INFR	LR	FDI
Pearson Correlation	UNemp	1.000	.828	645	.112	815	509
	Pop G	.828	1.000	.880	.102	.963	.690
	GDP	645	.880	1.000	.236	.904	.895
	INFR	.112	.102	.236	1.000	.062	.164
	LR	815	.963	.904	.062	1.000	.729
	FDI	509	.690	.895	.164	.729	1.000
Sig. (1-tailed)	UNemp	•	.000	.000	.278	.000	.002
	Pop G	.000		.000	.295	.000	.000
	GDP	.000	.000		.105	.000	.000
	INFR	.278	.295	.105		.373	.193
	LR	.000	.000	.000	.373		.000
	FDI	.002	.000	.000	.193	.000	

Regression Results

Table III depicted that all the five variables had jointly accounted for 71 percent variation in the rate of unemployment. The value of F-Statistic was statistically significant at 5% significance level indicating that the model was overall significant. All the coefficient of explanatory variables was statistically significant except inflation. Coefficient of population growth and inflation indicates that a 1% increase in the two variables will increase the unemployment rate by 3% and 2% respectively.FDI, Litracy and GDP has a negative and significant impact on the rate of employment.

Table III: Coefficients

Unstandardiz	ed Coefficients	Standardized Coefficients		
В	Std. Error	Beta	Т	Sig.
-2.323	1.370		-1.695	.103
.049	.023	.033	2.091	.041
030	.017	023	-1.765	.004
.022	.051	.021	.720	.478
092	.069	085	-1.332	.001
451	.324	265	-1.009	.003
	Unstandardiz B -2.323 .049 030 .022 092 451	B Std. Error -2.323 1.370 .049 .023 030 .017 .022 .051 092 .069 451 .324	B Std. Error Beta -2.323 1.370 .049 .023 .033 030 .017 023 .021 .092 .069 085 .2151 .451 .324 265 .265	B Std. Error Beta T -2.323 1.370 -1.695 .049 .023 .033 2.091 030 .017 023 -1.765 .022 .051 .021 .720 092 .069 085 -1.332 451 .324 265 -1.009

	R-Squared	0.723	Sum Squares Resd
	Adj R-squared	0.713	F-Statistics
	Std. E of the Estimate	0.94100	Prob.(F-stat)
D 11			

a. Predictors: (Constant), FDI, INFR, Pop G, LR, GDP

b. Dependent Variable: UNemp

CONCLUSION AND RECOMMENDATION

Unemployment is the foremost and a stable macroeconomic problem for the Pakistan economy. It can be analyzed from various angles but this study focus on its determinants by using the annual time series data over the period of 1988 to 2018. Findings of the study depicts that Population growth and inflation rate have a positive correlation with the rate of unemployment while FDI, Litracy rate and GDP growth shows a positive significant influence on unemployment rate. Which means Higher Population Growth and inflation rate of unemployment and Higher is the GDP, literacy rate and FDI, lower will be the rate of unemployment.

To retrieve unemployment from rising, it is indispensable to take instant corrective measures so that economy of Pakistan could endure this unacceptable curse. On the basis of the results of the study, the following suggestions are recommended

- Increase in GDP in such a way that it increases investment, employment opportunities, and productivity.
- To take action against black marketers who stock the commodities and then sale with high rates, which is the main cause of inflation in Pakistan.
- All possible steps are needed to capture investor from abroad because FDI plays very vital role in decreasing unemployment. Government should try attracting foreign investor.

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