



RELATIONSHIP BETWEEN UNEMPLOYMENT AND INFLATION: IMPACT OF UNEMPLOYMENT AND INFLATION ON INDIA'S ECONOMIC GROWTH

Vijayalaxmi K¹, Dr. Shripathi Kalluraya²

¹Research Scholar, Institute of Social Science and Humanities, Srinivas University, Mangalore, Karnataka, India-575001

²Research Professor, Institute of Social Science and Humanities, Srinivas University, Mangalore, Karnataka, India-575001

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-----ABSTRACT-----

Unemployment is a significant issue in modern India, as it is in many other countries around the world. The issue of joblessness in India is explored in this paper. This study's information is secondary data collected between 2010 and 2020. Unemployment (UNEMP) serves as the dependent variable, with Gross Domestic Product (MKTP) and Inflation (INF) serving as the independent variables. The findings show that due to increased uncertainty, inflation significantly negatively impacts economic performance in India. The use of a log of real GDP, the nature of the regression model applied, and the fact that the impact of human capital and physical capital has been controlled explain why unemployment has not significantly affected India's real GDP. India's economic performance has been dramatically boosted by the country's physical and human capital investments. Human capital investment boosts labour force productivity, which in turn boosts output.

In contrast, physical capital investment increases the amount of capital per unit of labour, which in turn can boost productivity per worker. As a result, productivity rises and the economy benefits. The leading causes of unemployment are the rapid increase in the world's population, the dearth of available jobs, and the inefficiency of the public sector. Through its strategies and resources, the Indian government may seek to attract foreign investors to facilitate the modernization of India's agriculture sector and the creation of new jobs in the private sector.

KEYWORDS: GDP (MKTP), Inflation, Unemployment, Regression Analysis, Descriptive Statistics.-----

I. INTRODUCTION

India, after China, has the most significant total population in the world. India now has a population of over 1.4 billion, roughly 18% of the world's total. The unemployment crisis is grave in India, as it is everywhere else globally. The unemployment crisis has worsened as population growth has accelerated. India has 471 million people now employed. Without diminishing its significance, Covid-19 has impacted the planet and influenced individuals worldwide. There has been a massive loss of employment all around the world. Rising unemployment rates and slowing economic growth are the most significant challenge to developing nations. Unemployment and poverty reduction have been India's most pressing issues since independence [1]. According to 2019 statistics, around a quarter of India's young adults (15-24) in the labour market need jobs. The youth of a nation is one of its most important resources. Young people are one of the driving factors behind the transformation in key spheres, including social change, economic growth, and technological innovation. It is widely agreed that young unemployment is one of the most pressing problems facing global economies in the twenty-first century. Researchers Venkatanarayana, M., and Mahendra Dev, S. [2].

The increase of young people in the population, also known as the "youth bulge," is projected to be a major factor in India's economic development in the future. Since the number of young people in the labour market has continuously decreased as school and college enrolment rates have risen, youth unemployment and underemployment will provide a substantial policy problem in India and many other emerging countries [3]. The main problem in India is unemployment, which is mostly caused by the country's economy's negative growth, the adoption of labour-saving alternatives like technology, and a rise in the number of workers available in the



industry. High unemployment is a frequent problem for the Indian economy [4]. Since India embraced a "one-sector growth model" in the 1980s, the economy of the nation has been beset with these colossal challenges. Early in the 1990s, India introduced new policies to address rising unemployment and slow growth. However, the unexpected repercussions of the measures have slowed economic and employment development and increased unemployment, prompting some economists to refer to the current period in the country as "jobless growth." B. Mathavan and A. H. Padder [5].

Macroeconomic policies primarily aim to influence GDP, inflation, and unemployment rates. These three economic elements directly impact civilizations and could lead to social and economic issues if they fluctuate too rapidly or slowly. Inflation might rise if economic growth continues too quickly, and unemployment could rise if growth stalls, all of which suggest that these three factors have a substantial bearing on economic growth, inflation, and joblessness. Both high and low inflation is bad for economies because they reduce actual money holdings, which in turn reduces production, real wages, and private consumption. Likewise, deflation leads to declining prices, output profit, and employment. In the long term, the jobless lose the benefits of their investments in skill development and education, and the children of the unemployed and their families are deprived of the benefits of these investments. Poverty increases, the quality of life worsens, less employment is created, and the human development index falls due to sluggish economic growth. Understanding these macroeconomic elements about one another is crucial in light of their significance. Current research does not provide enough evidence to draw broad conclusions about all economies; instead, more targeted studies are required for each country so that policymakers may use the results to make informed choices. The most significant problem facing people and society today is unemployment, which chills the economy, consumers, and businesses in developing nations like India. Since the outset of India's planning process, reducing the country's high unemployment rate has been a top priority. Many labour market hurdles, as revealed by research, impede individuals from escaping unemployment and making a livelihood; these barriers disproportionately impact the poor and stem from a cycle of poverty that breeds marginalization, inequality, and more poverty. Macroeconomic factors such as the effect of labour market volatility on monetary policy, the share of GDP that unemployment accounts for in GDP growth, and the correlation between unemployment and inflation all contribute to the severity of India's unemployment problem. The three most critical macroeconomic factors for India's economy—inflation, unemployment, and output growth—are primarily unexplored in the available research. These factors are cornerstones of India's economic policy and crucial to the economy's growth. This research was conducted to shed light on the state of the Indian economy and offer policy suggestions for its long-term growth and prosperity. "Such suggestions might be based on settling disagreements in the current research about the effect of inflation and unemployment on economic performances in various countries. In contrast to the findings of Muryani and Pamungkas (2018) [6], who used the Error Correction Model (ECM) to show that unemployment has considerably contributed to output growth in Indonesia, Tenzin (2019) [7] found that unemployment did not affect production in Bhutan." Auto-Regressive Distributed Lag (ARDL) regression by Makaringe and Khobai (2018) [8] shows that joblessness reduces production in South Africa. Unemployment aids South Africa's economic development, as shown by research by Banda, Ngirande, and Hogwe (2016) [9].

Nonetheless, there is more evidence that inflation reduces production in this scenario. Inflation is known to reduce economic development in a variety of contexts, as shown by the findings of several research (Tenzin, 2019 [7]; Saidu and Muhammad, 2018 [10]; Muryani and Pamungkas, 2018 [6]; Munyeka, 2014 [11] etc.). The nature of the data collected at various times and under different economic conditions may help account for the discrepancies in the effects of unemployment on production. It is possible that missed factors or a flawed model are to blame for the discrepancies in how unemployment affects different people. By focusing on the most critical determinants of production, such as physical and human capital and excluding the labour force due to its strong correlation with physical capital, this research aims to circumvent the exclusion of variables. The analysis concludes that the effect of unemployment will likely represent the genuine connection in India throughout the review period since most factors that influence production were included. Karl Person's correlation test (a common mathematical method in which the numerical representation is applied to measure the level of relation between linearly related variables) is used in this paper to establish the nature of the relationship among the variables, in addition to exploring the nature of the impact one variable has over another (their regression coefficients and their t-ratios). In addition, knowing how correlation works helps us spot indications of multi-collinearity. This may increase confidence in regression analyses.

Answers to the following questions may be found by examining the two most influential factors in India's unemployment rate:

- To learn about the many forms of joblessness in India, and



- To learn about and analyse how GDP and inflation relate to unemployment in India.

II. LITERATURE REVIEW

According to Xia, X. (2021) [12], inflation and unemployment are two of the biggest problems facing economies worldwide, especially emerging nations. "The study's overarching goal was to provide empirical evidence of the trade-off between inflation and unemployment in the Indian economy over six years." As the data demonstrates, there is a negative correlation between inflation and unemployment. The data also demonstrates how higher inflation helps lower unemployment rates. Many statistical methods, including bivariate correlation analysis and the Phillips curve, were used for the study's data. Unemployment and price increases are two of the factors being examined. The Phillips curve analyses how unemployment affects the rate at which wages increase or decrease. United Kingdom data from 2001-2015 is utilized for the analysis. According to the statistics, unemployment has contributed to rising prices. Every economy faces the persistent challenge of high unemployment. Even if the statistics reveal a correlation between inflation and joblessness, there is no such link in the Indian economy. The report suggests that authorities should sincerely attempt to restructure the economy, reduce unemployment, and keep inflation under control.

Using data from the 2011 and 2016 censuses, Padder, A. H., and Mathavan, B. (2021) [5] show that unemployment rates in India have risen with the country's GDP. The research was conducted to learn how economic expansion affects joblessness. The analysis utilized data from 1990 through 2020. Hodrick-Prescott, descriptive statistics, Granger causality, and the Ordinary Least Squares model were the statistics used in the research. The statistics indicate that the Granger causality test did not find any association between the two variables; that is, neither GDP nor unemployment caused the other. The regression study shows the unemployment rate has a negative relationship with economic growth. The data demonstrates that the unemployment rate in India is only influenced by economic development by 6%, with the remaining 94% being the result of other variables. According to a study by Parul (2020) [13] of the International Labour Organization, the spread of the new coronavirus has put over 2.5 billion jobs at risk throughout the globe. Eighty-one per cent (or four out of five) of the world's 3.3 billion individuals have experienced some job loss. The United States, Canada, the United Kingdom, and numerous other European and Asian countries have seen significant increases in their unemployment rates due to these job losses.

Tenzin (2019) [7] uses data from 1998 to 2016 to examine the effect of unemployment and inflation on economic development in Bhutan. To do this, the autoregressive distributed lag (ARDL) model is used to estimate the parameters of the regression model. The findings demonstrate that unemployment does not affect economic development in Bhutan immediately or over the medium to long term. Long-term economic growth may be affected by inflation. Inflation is blamed because it creates unpredictability.

Saidu and Muhammad (2018) [10] investigated a nexus between Nigeria's unemployment, price increases, and GDP expansion. Using Granger causality (Umaru, A., & Zubairu, A. A. (2012) [14]. This research seeks to understand the events that led to the observed results. To check whether the variables used are steady, we performed a unit root analysis on the data before applying Granger causality. Data trends are evident in the findings. Inflation affects economic growth, but growth does not cause inflation, according to the findings of the Granger causality test. Unemployment rates are unrelated to economic expansion.

Economic growth in Indonesia has been studied by Muryani and Pamungkas (2018) [6]. They looked at how GDP growth was affected by unemployment, inflation, government spending, the size of the labour force, and the amount of fixed capital investment. This study uses the Error Correction Model (ECM) Amassona, Ditimi dan Nwosa, Philip I. (2013) [15]. To estimate the parameters of a population regression. Growth in GDP is supported by both unemployment and total fixed investment. Employment costs and price increases impede economic expansion. Spending by the government has no bearing on economic growth.

Using quarterly data from 1994 to 2016, Makaringe and Khobai (2018) [8] analyze the relationship between unemployment and economic growth in South Africa. The ARDL regression model is used to estimate the regression coefficients in this research. The regression analysis reveals that unemployment dampens South Africa's economic expansion. Leshoro (2015) [16] investigates how the South African labour market affects GDP growth. The researchers estimated the connection using the Toda Yamamoto causality tests (Guru- Gharana, K.K. (2012) [17]. The data included in the article spans the years 2000Q1–2012Q3. These findings debunk the hypothesis that rising employment rates generate rising GDP.



III. UNEMPLOYMENT, INFLATION, AND GDP IN INDIA

A lack of contemporary technology, equipment, and other crucial inputs contributes to unemployment. That unemployment caused by a lack of skilled labourers is causally related to a lack of productive inputs. Consequently, local production falls short of demand, necessitating the purchase of imported materials. Typically, the economy will have a greater need for imports than exports. The result is a widening trade imbalance, which eventually must be closed by devaluing the rupee, with all the inflationary effects it entails. The Indian government has implemented the Inflation Targeting (I.T.) framework, which sets the target inflation rate between 3% and 6%. This phenomenon hits those who do have jobs worse since inflation eats away at their actual incomes.

For this reason, economists devised the Phillips Curve to show how unemployment and wage growth interact (inflation). In most countries, rapid economic development reduces unemployment worries, but this is not true in India. As the Indian economy grew, only a few high-paying jobs were created, suggesting that unemployment may rise even as the economy improves. Low economic growth and rising unemployment are significant macroeconomic issues for India. A poll [18] found that the number of people employed in India decreased between 2012 and 2016 and that the unemployment rate went up. A rise in the available labour force, a trend toward replacing labour with capital, and the global economic downturn are India's leading causes of unemployment. India's government has been trying to address the country's increasing unemployment and slowing economy, but its efforts could have been faster and more effective. The situation in India has to be studied since studies have shown a unidirectional association between unemployment and economic development in the United States.

IV. RESEARCH METHODOLOGY

The present research relied on secondary data collected between 2010 and 2020. The information utilized in the research came from the Reserve Bank of India (RBI), the World Bank, and other scholarly works. Unemployment (UNEMP) serves as the dependent variable, while Gross Domestic Product (GDP MKTP) and Inflation (INF) serve as the independent variables in this analysis. Linear Regression analysis was used to learn how GDP and INF affected the dependent variable, UNEM.

Table 1. Unemployment Rate (%) of India during 2010-2020

YEAR	UNEMPLOYMENT RATE (%)	ANNUAL CHANGE (%)
2020	7.11%	1.84%
2019	5.27%	-0.06%
2018	5.33%	-0.08%
2017	5.41%	-0.10%
2016	5.51%	-0.05%
2015	5.56%	-0.04%
2014	5.60%	-0.07%
2013	5.67%	0.01%
2012	5.66%	0.01%
2011	5.65%	0.00%
2010	5.65%	0.04%

Data source: Macro Trends



Table 2. Inflation Rate (%) of India during 2010-2020

YEAR	INFLATION RATE (%)	ANNUAL CHANGE
2020	6.62%	2.90%
2019	3.72%	-0.22%
2018	3.95%	0.62%
2017	3.33%	-1.62%
2016	4.95%	0.04%
2015	4.91%	-1.74%
2014	6.65%	-4.41%
2013	11.06%	1.75%
2012	9.31%	0.45%
2011	8.86%	-3.33%
2010	11.99%	1.11%

Data source: Macro Trends

Table 3. GDP Growth (MKTP %) of India in percentage during 2010-2020

YEAR	GDP GROWTH (%)	ANNUAL CHANGE (%)
2020	-7.25%	-12.01%
2019	4.04%	-2.49%
2018	6.53%	-0.26%
2017	6.79%	-1.46%
2016	8.25%	0.26%
2015	7.99%	0.59%
2014	7.41%	1.02%
2013	6.38%	0.93%
2012	5.45%	0.22%
2011	5.24%	-3.26%
2010	8.49%	0.64%

Data source: World Bank

V. DISCUSSION

Using the logarithm of capital stock and human capital as control variables, this research examines how unemployment and inflation affect economic performance in India. The primary goal of the research is to determine whether or not inflation and unemployment rates continue to affect the logarithm of India's real GDP after these other factors have been taken into account. Tenzin (2019) [7], for instance (1) Many studies, including Saidu and Muhammad (2018) [10], have indicated that inflation reduces real GDP. Unemployment has been shown to increase real GDP, according to research by Muryani and Pamungkas (2018) [6]. Unemployment reduces real GDP, as indicated by studies by Mohseni and Jouzaryan (2016) [19] and Makaringe and Khobai (2018) [8]. Based on the findings of this research, it is clear that inflation significantly negatively impacts India's economic growth. This result agrees with previous studies, such as those by Munyeka (2014) [11], who used ARDL to look at inflation's impact on South Africa's economic growth, Tenzi (2019) [7], who used ARDL to look at inflation's impact on Bhutan's economic growth, and Muryani and Pamungkas (2018) [6], who looked at the situation in Indonesia using ECM. Inflation reduces economic growth because it increases uncertainty, which in turn reduces investment, employment, and output (Tenzin, 2019) [7]. Yet, our findings of a high unemployment rate in India suggest that this has only had a little impact on the country's actual GDP. Using the ARDL regression model, Maringe and Khobai (2018) [8] demonstrate that unemployment has dampened India's economic growth. Yet this finding goes against what they found. Similarly, the findings of Saidu and Muhammad (2015) [10], who discovered that unemployment improved economic performance in South Africa and Nigeria, run counter to the findings of the current study. This finding is consistent with that of Maringe and Khobai (2018) [8], who looked at South Africa, and Tenzin (2019) [7], who looked at the consequences of unemployment in Saidu and Muhammad



(2015) [10], who looked at Nigeria. The use of a log of real GDP, the details of the regression model employed, and the exclusion of the effects of human and physical capital are all possible causes of the absence of a correlation between unemployment and growth. The ARDL model is used by Tenzin (2019) [7] with the log of real GDP, while Leshoro (2013) [16] and Saidu and Muhammad (2015) [10] use causality models.

Based on the findings, it is clear that the country's investment has greatly aided India's economic growth in both physical and human resources. Investment in human capital enhances production because it raises worker productivity, while investment in physical capital boosts output per worker by raising the ratio of capital to labour. Because of this, production and, by extension, economic performance go up.

VI. CONCLUSION

Using time series data from India from 2010 to 2020, the research sheds light on how unemployment and inflation affect GDP growth. Evidence that unemployment and inflation have a depressing effect on GDP. Real GDP is connected strongly with unemployment but just slightly with inflation. As a result, inflation significantly threatens India's GDP and the job market. Fixed-income investors face a significant risk from inflation. Rapid technological progress, shifts in consumer preferences, and weather conditions all impact the labour market because they influence consumer behaviour, how people see the world, and whether or not they are motivated to work and look for work. Increasing GDP should result in more employment opportunities, which should, in turn, reduce the unemployment rate. Therefore our findings are consistent with that prediction. The research also showed that investments in both infrastructure and people considerably boosted India's GDP growth rate. There is a negative relationship between inflation and the log of real GDP. India's real GDP is unaffected by the country's unemployment rate. In order to reduce unemployment in India, it is necessary to manipulate factors that significantly affect the country's actual GDP. In this research, two such factors, investments in physical and human capital, have been identified as drivers of real GDP. The most significant source of unemployment in India is a lack of vital skills, and investing in human capital may help address this issue. The availability of physical capital is associated with higher worker productivity and is also associated with higher employment, which may lead to lower rates of unemployment. "Growth in potential productivity and economic growth seems to be primarily determined by increases in both physical and human capital in the form of skill development." Findings showed that increasing the quantity and quality of physical capital (which boosts labour productivity) and investing in human capital (which improves the quality of workers' lives) have positive outcomes. To maintain the favourable trend of economic growth throughout the years, it is advised that India undertake large-scale investments in infrastructure and skill development and carry out renewal at suitable intervals. To maintain the expansion of value addition, funding may be allocated toward mechanical technologies, the acquisition of supplementary and appropriate knowledge pertaining to their management, the implementation of new technologies and practices, and the improvement of infrastructure, manufacturing methods, and personnel training.

VII. RECOMMENDATIONS

Economists look at the issue of unemployment to find answers as to why it exists and how it might be mitigated. The major causes of unemployment are the rapid increase in the world's population, the dearth of available jobs, and the inefficiency of the public sector. Economic growth has been shown to have a negative and substantial impact on India's unemployment rate, suggesting it might be utilized as a valuable tool in bringing the unemployment rate down to where it needs to be. The government of India "may prioritize modernizing the agriculture sector," which is the most important sector providing more than 42% of livelihood but is contributing merely 13% towards the Gross Domestic Product, and providing a favorable environment for the private sector to generate new jobs and expand existing ones. In India, inflation and joblessness are unrelated. Rising inflation and gross domestic product growth go hand in hand. India's government should conduct extensive research and monitoring to strike a balance between GDP, inflation, and unemployment.

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