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ANALYSIS OF DETERMINANTS OF UNEMPLOYMENT RATES IN REGENCIES/CITIES IN WEST JAVA PROVINCE

Ni Komang Septiani
Faculty of Economics and Business, Udayana University
Corresponding author: nikomangseptiani10@gmail.com

Anak Agung Istri Ngurah Marhaeni
Faculty of Economics and Business, Udayana University

Abstract

Unemployment is an important indicator of labor market conditions and regional economic performance. This study aims to analyze differences in unemployment rates before, during, and after the COVID-19 pandemic, differences in unemployment rates between rural and urban areas, and the effects of education level, technology utilization, health level, and investment on unemployment, with emphasis on the role of education level in moderating the effect of investment on unemployment. This study employed panel data analysis using the Fixed Effect Model with 216 observations, complemented by ANOVA, independent samples *t*-test, F-test, *t*-test, and Moderated Regression Analysis (MRA). The results reveal significant differences in unemployment rates before, during, and after the COVID-19 pandemic, as well as between rural and urban areas. Simultaneously, all variables have a significant effect on unemployment. Partially, education level has a negative and significant effect on unemployment, technology utilization has a positive but insignificant effect, while health level and investment have negative but insignificant effects. Furthermore, education level is unable to moderate the effect of investment on unemployment. These findings indicate that although education plays an important role in reducing unemployment, it has not been able to strengthen the effect of investment on unemployment reduction statistically.

Keywords: Education, Technology, Health, Investment, Unemployment.

INTRODUCTION

The unemployment rate is one of the key indicators of labor market performance and regional economic development because it reflects the imbalance between labor supply and labor demand (Chakravorty et al., 2023; Borjas, 2024). Over the past decade, global labor markets have undergone significant transformation driven by rapid digitalization, automation, structural changes in production, and increasing capital mobility. The transition from traditional occupations to technology-based jobs has reshaped labor demand and the skills required by employers, creating new challenges in generating decent employment opportunities (Wahyuni & Hidayati, 2025). These transformations accelerated during the COVID-19 pandemic through the expansion of digital work arrangements, while sectors requiring physical interaction experienced substantial employment losses (Battisti et al., 2022). Consistent with this Dang et al., (2023) reported that the pandemic increased unemployment, reduced job quality, and weakened wages due to disruptions in economic activity and production. Consequently, many