

ANALISIS DAN PERAMALAN TINGKAT PENGANGGURAN TERBUKA MENGUNAKAN REGRESI DATA PANEL PADA KAB/KOTA DI PROVINSI ACEH

ABSTRAK

Tingkat Pengangguran Terbuka (TPT) merupakan salah satu indikator penting dalam menggambarkan kondisi pasar tenaga kerja dan permasalahan ketenagakerjaan suatu wilayah. Perbedaan karakteristik sosial dan ekonomi antarwilayah menyebabkan tingkat pengangguran di Provinsi Aceh menunjukkan kondisi yang beragam. Penelitian ini bertujuan untuk menganalisis pengaruh Tingkat Partisipasi Angkatan Kerja (TPAK), Indeks Pembangunan Manusia (IPM), dan persentase penduduk miskin terhadap TPT pada 23 kabupaten/kota di Provinsi Aceh selama periode 2017–2024, menentukan model regresi data panel terbaik, serta melakukan peramalan dan proyeksi TPT untuk periode 2025–2027. Metode yang digunakan adalah regresi data panel dengan membandingkan *Common Effect Model* (CEM), *Fixed Effect Model* (FEM), dan *Random Effect Model* (REM). Pemilihan model dilakukan melalui Uji Chow dan Uji Hausman. Selanjutnya, peramalan TPAK, IPM, dan persentase penduduk miskin dilakukan dengan membandingkan model tren linear, kuadratik, dan eksponensial berdasarkan nilai *Mean Absolute Percentage Error* (MAPE) terkecil. Hasil peramalan variabel independen kemudian diintegrasikan ke dalam persamaan struktural model FEM untuk memperoleh proyeksi TPT masing-masing kabupaten/kota pada periode 2025–2027. Hasil penelitian menunjukkan bahwa FEM merupakan model yang paling sesuai berdasarkan hasil Uji Chow dan Uji Hausman. Secara parsial, TPAK, IPM, dan persentase penduduk miskin belum menunjukkan pengaruh yang signifikan terhadap TPT pada taraf signifikansi 5%, demikian pula secara simultan ketiga variabel tersebut belum menunjukkan pengaruh yang signifikan. Integrasi hasil peramalan variabel independen dengan model FEM menghasilkan proyeksi TPT yang menunjukkan adanya perbedaan kondisi antarwilayah di Provinsi Aceh. Hasil penelitian diharapkan dapat memberikan informasi empiris dan prediktif mengenai kondisi pengangguran serta menjadi bahan pertimbangan dalam perumusan kebijakan ketenagakerjaan yang mempertimbangkan karakteristik masing-masing wilayah.

Kata kunci: Tingkat Pengangguran Terbuka, regresi data panel, *Fixed Effect Model*, peramalan, MAPE.

***ANALYSIS AND FORECASTING OF THE OPEN UNEMPLOYMENT RATE
USING PANEL DATA REGRESSION ACROSS REGENCIES AND CITIES IN
ACEH PROVINCE***

ABSTRACT

The Open Unemployment Rate (TPT) is one of the important indicators used to describe labor market conditions and employment problems in a region. Differences in socioeconomic characteristics across regions result in varying unemployment rates among regencies and cities in Aceh Province. This study aims to analyze the effects of the Labor Force Participation Rate (TPAK), Human Development Index (IPM), and the percentage of the population living in poverty on the Open Unemployment Rate across 23 regencies and cities in Aceh Province during the 2017–2024 period, determine the best panel data regression model, and conduct forecasting and projections of the Open Unemployment Rate for the 2025–2027 period. The method employed is panel data regression by comparing the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Model selection was conducted using the Chow test and Hausman test. Furthermore, forecasting of the Labor Force Participation Rate, Human Development Index, and poverty rate was performed by comparing linear, quadratic, and exponential trend models based on the minimum Mean Absolute Percentage Error (MAPE). The forecasting results of the independent variables were then integrated into the structural equation of the selected FEM to obtain Open Unemployment Rate projections for each regency and city during 2025–2027. The results indicate that the Fixed Effect Model is the most appropriate model based on the Chow and Hausman tests. Partially, the Labor Force Participation Rate, Human Development Index, and poverty rate do not show statistically significant effects on the Open Unemployment Rate at the 5% significance level. Similarly, the three variables do not have a statistically significant simultaneous effect on the Open Unemployment Rate. The integration of independent-variable forecasting with the Fixed Effect Model produces Open Unemployment Rate projections that indicate differences in unemployment conditions across regions in Aceh Province. These findings are expected to provide empirical and predictive information on unemployment conditions and serve as a consideration for formulating employment policies that take into account the characteristics of each region.

Keywords: Open Unemployment Rate, panel data regression, Fixed Effect Model, forecasting, MAPE.