

## **ABSTRACT**

*This study aims to analyze the empirical link between population, gross domestic product, and fuel oil energy consumption, and the increase in carbon dioxide in Indonesia, which is examined in this paper. This study aims to determine the effect of population on carbon dioxide emissions in Indonesia; (ii) determine the impact of gross domestic product on carbon dioxide emissions in Indonesia, and (iii) assess the effect of fuel oil energy consumption on carbon dioxide emissions in Indonesia. Granger causality using time series data was the method.*

*Environmental circumstances in Indonesia reveal that an increase in carbon dioxide is causing environmental damage due to the country's growing population. To meet the needs of its growing population, the economy must provide more goods and services. The existence of commercial and consuming activity, on the other hand, produces environmental degradation that contributes to global warming.*

*According to the estimation results, the population has bidirectional causality with carbon dioxide increase. In contrast, gross domestic product has no relationship with carbon dioxide increase, and fuel oil consumption has unidirectional causality with carbon dioxide increase.*

*Key Word: Population, Gross Domestic Product, Fuel Oil Consumption, Carbon Dioxide, Granger Causality*