

**THE EFFECT OF GROSS DOMESTIC PRODUCT, POPULATION, AND  
ENERGY CONSUMPTION ON ENVIRONMENTAL DEGRADATION  
BASED ON THE KUZNETS CURVE (EKC) ENVIRONMENT CONCEPT IN  
INDONESIA, 1970–2021**

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**ABSTRACT**

*Every nation works to strengthen its economy in tandem with the advancement of the times in order to compete in the global market. The state of the environment is actually affected by economic improvement efforts. One of the unfavorable externalities of economic growth is environmental degradation. An increase in carbon dioxide (CO<sub>2</sub>) emissions is one example of how environmental deterioration results from economic growth. The long-term correlation between economic expansion and environmental deterioration is explained by the Environmental Kuznets Curve, or EKC. This study attempts to evaluate and demonstrate whether the inverted U-curve seen between economic growth and environmental degradation in Indonesia between 1970 and 2021 is consistent with the EKC hypothesis. This study includes other factors, such as population number and energy consumption, in addition to economic growth, to examine the rise in CO<sub>2</sub> emissions in Indonesia. The Error Correction Model (ECM) estimate technique is used in this study's descriptive quantitative methodology. The EKC hypothesis is demonstrated in Indonesia and has reached a turning point, which demonstrates that along with rising economic growth, Indonesia's level of CO<sub>2</sub> emissions can also decrease. This is evident from the estimation findings obtained with ECM.*

**Keywords :** CO<sub>2</sub>, ECM, EKC, Energy, U-upside down