

Environmental Degradation, Economic Growth and Life Expectancy in India: Evidence from Time-Series Analysis

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Abstract: In present economic volatility, the life expectancy of people of India impacting through various economic factors especially by carbon emission, pesticide used in agriculture, increasing population, government health expenditure budget and GDP growth rate. This research investigates the impact of these variables on life expectancy using time-series data since 1991 to 2025. This study employs a quantitative research design and applies multiple regression model using Sigma XL. Diagnostic tests, including ANOVA and the Durbin–Watson statistic, are used to validate robustness of the model. The results indicate that CO₂ emissions and population growth have a significant positive impact on life expectancy. Conversely, GDP growth, health expenditure, and agricultural growth do not exhibit statistically significant impact on life expectancy. The findings emphasise that integrated policy frameworks can balance economic growth along with environmental sustainability. Government must emphasize and prioritize budget on efficient healthcare expenditure, clean energy adoption and sustainable agriculture production.

Key word: Fossil CO₂ Emission, GDP Growth, Agriculture Growth, Population, Health Expenditure

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