



INDIA'S GDP AND DEATH RATE: AN EMPIRICAL STUDY OF INDIAN ECONOMY

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Article DOI: <https://doi.org/10.36713/epra10175>

DOI No: 10.36713/epra10175

ABSTRACT

Death rate in India being problematic from past many years, which is affected by many factors prevailing in the country, the study attempts to find out the effects of economic growth on the death rate of the country. GDP is considered as an indicator of the economic growth of the country for the study. The data regarding GDP and death rate have been collected from the secondary sources like WORLDMETER and WORLDBANK database. The correlation and regression analysis have been used to find out the nature and the degree of effect of economic growth on death rate of the country. A strong negative correlation has been reported between the GDP growth rate and the death rate of the country. Also it was found that GDP accounts for the 46% of cause of change in the death rate of the country between the period of 2011 to 2019.

KEYWORDS: National Income, Economic Growth, Mortality, Health, Population

JEL Classification Codes: E01, F43, I12, I10, P23

1.0 INTRODUCTION

The death rate in any country also indicates its priorities towards the health of the citizen of that country, the health expenditure by the government affects this rate for any country, to attain a better health for the country is essential in today's scenario because that will help to do better in various indices for example: HDI, many experts worldwide recommend some percentage of their GDP to be spent for the health of the country, WHO recommends 5% to be spent on the health of the country, India spends 3.6% of its GDP on health of the country.

India is found to be the second most populated country in the entire world. According to the 2019 version of the World Population Prospects the population of India stood at 1,352,642,280. In 2020, the average age of an Indian is 29 years, 37 for China and 48 for Japan; and, by 2030. In India death rate is measured at death per 1000 people.

The population of India is doubled to 1.2 billion, in between 1975 and 2010, India is expected to surpass china to be the most populous nation of the world by 2024.

The sex ratio of India was 944 females for 1000 males in 2016 compared to 940 females per 1000 in 2011. This showing an upward trend for last decade.

The GDP of the economy could affect many dimensions of it and death rate is one of them, it is expected that if GDP is gaining the health expenditure

could also be increased and death rate could be decreased and vice versa.

2.0 LITERATURE REVIEW

Nandita saikia and PN Mari bhatt (2008) have identified the factors affecting adult mortality in India. Miqdad Asaria in his research "Socioeconomic inequality in life expectancy in India" found that Life expectancy at birth was 65.1 years for the poorest fifth of households in India as compared with 72.7 years for the richest fifth of households. This constituted an absolute gap of 7.6 years and a relative gap of 11.7 %.

"Mortality, morbidity, and economic growth" a paper presented by Lorenzo rocco (2021) draws a result that reducing mortality and disability adjusted life years (DALYs), promotes per capita GDP growth. The magnitude of the effect is moderate, but non negligible, and it is similar for mortality and DALYs.

"Prospective Study of One Million Deaths in India: Rationale, Design, and Validation Results" (2006), the author has underline the cause of child and adult deaths but also key risk factors (behavioural, physical, environmental, and eventually, genetic). AGGREGATE INCOME SHOCKS AND INFANT MORTALITY IN THE DEVELOPING WORLD (2004) by Sarah Baird, Jed Friedman, and Norbert Schady, have highlighted that results suggest that economic shocks in the developing world generally lead to more infant deaths, especially of girls, and especially when these shocks are severe.

3.0 OBJECTIVES AND RESEARCH METHODOLOGY

This study aims to study the relationship between the Indian GDP rate and death rate over certain years, this study is based on exploratory research design, the data has been collected from the secondary sources like newspaper worldometer and worldbank website and other data bases, for the purpose of study the data on death rate and GDP for the year 2011-19 has been considered (refer to appendix). Correlation and regression techniques are applied for studying relationship between India GDP rate and death rate. MS-EXCEL was used for the analysis of the data.

3.1 Analysis

The analysis in this study is being done where the following hypothesis is proposed for the study of relationship between economic growth and unemployment rate in India.

H_0 : there is no negative correlation between India GDP rate and death rate in India from the period of 2011-19.

H_A : there is a negative correlation between India's GDP rate and death rate in India from the period of 20-19.

The following is given a table of the year and GDP% and death rate:

Table 1: Data for GDP and Death Rate Given the Respective Years

year	GDP %	Death rate
2019	4.04	7.27
2018	6.53	7.23
2017	6.8	7.21
2016	8.26	7.2
2015	8	7.19
2014	7.41	7.21
2013	6.39	7.25
2012	5.46	7.31
2011	5.24	7.39

The correlation analysis will be applied in the above given data of GDP and death rate of the respective years.

Table 2: Correlation Between The GDP and Deathrate

Column1	GDP	DEATHRATE
GDP	1	
DEATHRATE	-0.7286059	1

Table 3: Regression Analysis

Regression Statistics	Column1
Multiple R	0.728605904
R Square	0.530866563
Adjusted R Square	0.463847501
Standard Error	1.002114261
Observations	9

Column1	df	SS	MS	F	Significance F
Regression	1	7.95465795	7.95466	7.9211279	0.025979405
Residual	7	7.02963094	1.00423		
Total	8	14.9842889			



Column1	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	118.5485781	39.82790182	2.97652	0.0206163	24.37055557	212.7266006
X Variable						
1	-15.4582777	5.492468725	-2.8144	0.0259794	-28.44590245	-2.470652955

It is found that the p-value of the data i.e. 0.02066 is less than the level of significance i.e. 0.05% so it is evident

that null hypothesis is being rejected and alternate hypothesis is being accepted i.e. there is a negative correlation between the GDP and the death rate in the respective years. It was also found that GDP accounts for 46% of cause of change in death rate by the help of adjusted R square value.

4. CONCLUSION AND DISCUSSION

Based on the findings of the study it can be inferred that death rate and GDP numbers have a negative correlation that means, more the GDP growth the more decline can be shown in the death rate of the country, the implications will be like more steps should be taken to make GDP growth larger so that it will be helpful for the country's wellbeing, when GDP numbers will be higher the health expenditure could probably be increased that will result in the downfall of the death rate in the country, death rate could also be increased tremendously in the abnormal circumstances where higher GDP number found incapable to make it down i.e. in the times of the wars, natural disasters and pandemics as well, but this research is focusing only on the normal times impacts. The data have shown the impact of GDP on death rate i.e. 46% which simply means that g is very much

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effective to make death rate dip with the presence of other factors as well, which accounts for rest of the changes, It's very puzzling," says Adriana Lleras-Muney, an economics professor at the University of California, Los Angeles. "We know that people in rich countries live longer than people in poor countries. There's a strong relationship between GDP and life expectancy, suggesting that more money is better. When the life expectancy of the people will be longer that time will be very much productive for the economy as well, we cannot ignore the contribution of those strata of the people which could have morbidities.

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