JIAN (Jurnal Ilmiah Administrasi Negara): Vol. 9 No. 2 (2025), 175-189
e-ISSN: 2549-3566 p-ISSN: 2459-9786
URL : https://ojs.ejournalunigoro.com/index.php/JIAN

The Relation of Public Expenditure in Education and Health on Life Expectancy

Khadijatou Touray[1], Mahmoud Dokmak[2] , Nasirou Sohna[3*].
[12]Department of Economics and Management, University of Florence, Italy
[3]Department of Economics and Management, University of Padova, Italy

[*]Corresponding author: sohnanazir@gmail.com

ARTICLE HISTORY
Received [20 July 2025]
Revised [12 August 2025]
Accepted [15 September 2025]
Published [30 September 2025]

KEYWORDS
Public Spending, Health Expenditure, Education Expenditure, Regression Analysis, Life Expectancy

ABSTRACT
This paper assesses the impact of public spending on education and health on life expectancy in Germany, Japan, India, Brazil, and South Africa, using data from 2010 - 2021. Using World Development Indicators data, the analysis employs descriptive statistics, correlation, regression, and visual representation. Life expectancy is the dependent variable, with education and health expenditure (as a percentage of GDP) and GDP per capita as independent variables. This paper used a panel data approach to determine the relationship between public spending on education and health and life expectancy. Variables are: expenditure (% of GDP), health expenditure (% of GDP), and GDP per capita (constant 2015 US$). Findings show a significant positive relationship between health spending and life expectancy, particularly in high-income countries such as Japan and Germany. However, education spending does not show any meaningful impact across the five countries. Country-specific interactions suggest varying points of efficiency in spending, with South Africa standing out as an outlier, showing high expenditure but poor outcomes, likely due to systemic health burdens. The study concludes that health spending has more influential and impactful meaning on longevity than education. Recommending policies in enhancing health investment. While recognizing limitations in sample size and omission of other socio-economic variables.

Introduction

The Public spending is the transaction in which the governmental body spends on public goods and services to foster national development through development, one of the indicators of development being the GNI per capita. The spending is usually spread into various sectors, the health sector, education sector, infrastructure, and so on.

On a background checking the paper assessed if increase public spending in education and health matters and the statistical findings show that both overall spending and intra-sectoral allocation matters especially increased spending in primary and secondary education this improves educational attainment, a reduction in child mortality in the health sector as a result of an increase in public spending but it has not been proven that that a higher spending in the above mentioned sectors results to improvement in the public sector. (Sanjeev Gupta, 2002). The attainment of health is the right of every person and availability time access and affordability to health are very significant in the attainment of better health (Kaushalendra Kumar, Faujdar Ram, Abhishek Singh, 2013) he also further said healthy individuals in a country helps in the reduction of socio economic inequality and poor health is most concentrated in poor countries.

Approximately 2.3 million child mortality cases in India in the year 2005, which accounted for 20% of deaths worldwide, and 2 diseases, namely pneumonia and diarrheal diseases, caused 50% of death in infants between 1 and 59 months. Findings have showed that public healthcare expenditure has declined over the years in India because of its share of the GDP dropping to 0.7% in 2009 from 1.3% in 1990. (Kaushalendra Kumar, Faujdar Ram, Abhishek Singh, 2013).

The Wagner's law prescribes that highly developed countries are associated with high level of public spending and GNI per capita and since financing of education is interconnected to human capital development, and the Human capital is observed as a proxy to the measurement of quality of labor availability in the country, secondly where there is high human capital index there are lower unemployment rates and serve as a control tool in the labor market. Most of the developed and rich countries have been observed to have a higher human capital index than developing countries, therefore a better-quality labor force. (Millin, 2019).

- The objective of this paper is to help analyze and establish the outcome of public spending of education and health on life expectancy, if government decides to investment or less into this sectors what effects would It have on the overall improvement of life expectancy in that country also if its different outcomes in developed and developing countries. Does higher public spending on education have an impact on overall development across the five countries?
- Which of the five countries has better outcomes because of public spending on education and health?
- Is the effect of public spending more evident in developed than developing countries?

In the findings of (Peter Lanjouw, 2001) Indonesia has remarkably increased in the number of children enrolled in school over the past decades. The results show that between 1971-1997 the rate of primary school enrollment increased by 110%, a 72.2% increase in junior school enrollment, and 46.5% enrollment in senior secondary schooling.

However, the national enrollment seems to have been limited by financial crises which caused a small decrease in the enrollment rate as a result there has been a delay in enrollment in senior secondary school. It also led to the reduction of the average age children were enrolled for the primary school children the age dropped from 9.75-9.59 from 1995 to 1997 and steadily increased to 9.60 in the 1998 and 9.61 in 1999, a similar observation occurred for junior secondary school 14.23 in 1995, to 14.18 in 1997, to 14.21 in 1998 to 14.27 in 1999 and evidence showed that the crises has been severe in other areas during the school survey as the enrollment in rural areas prove to be lower than that of the urban areas and about 3% in all schools for dropouts. (Gladys Lopez-Acevedo, 2000) showed that the structure of the Mexico's educational system showed that there was basic education which was the governments priority, and the system consisted of early child education optional infants between the ages 3 to 5yrs old and mandatory primary schooling for the ages 6-14yrs in consideration of late enrollment. A mandatory secondary school consisting of a 3-year cycle intended for children between the ages of 12-16yrs old. At this level the education structure is divided into vocational and technical training, inclusive of telesecundaria a learning tool that can accessed via television network or radios to reach remote areas also supported by face-to-face assistance from tutors. The next level of education is where kids are given the option to choose between technical schools and upper secondary education, the duration of the program is

usually 3years and a high percentage of the children choose upper secondary education as it would give them the chance to further their education in the tertiary schooling.

The total public expenditure on education per student in Mexico raised gradually up to 1994 and peaked in 1998, and the total number of student enrolled also increased 26million to 28.5million in the same years as a result this increased the GDP by 5.2% in the year 1998 and federal government accounts to approximately 80% of the sector spending and it became a little bit more egalitarian in per-capita terms across different schooling categories (Gladys Lopez-Acevedo, 2000).

The results of the mixed effect model show that there is a positive relationship between public health expenditure and longevity measured by life expectancy at birth. In accordance to the results the increase in health expenditure simultaneously increases life expectancy reducing the mortality rate of the population and it's proven that this effect is statistically significant at 0.5% level. The results further suggest that a 1% increase in public health expenditure will result in a 0.64% decrease in infant mortality. The results also indicated that a higher GDP growth rate is related to higher life expectancy as the test on income and infant mortality turn out to be negatively related, meaning the higher the income per capita in a country, i.e. economic performance, the higher the life expectancy rate. The relationship between life expectancy and unemployment rates in the United States and it was proven that life expectancy was lower in areas with high unemployment rate. (Michaela Onofrei, 2021)

Discussing the impact of health and education expenditure on longevity (Barro, 1996)further explained in his findings that the neoclassical model explains how public expenditure on education and health can contribute to long term economic growth through increasing in productivity of the workforce. Further highlighted that inefficient expenditure in these areas can lead to counter productivity.

Method

This paper adopts a quantitative research design**,** engaging panel data approach to Determine the relationship between public spending on education and health and life expectancy across five countries: Germany, Japan, India, Brazil, and South Africa, between 2010 and 2021. Data were extracted directly from the WDI database and organized into a panel dataset covering 12 years (2010–2021), yielding 60 country-year observations.

The study does not use human subjects; instead, it relies on secondary data sourced from the World Bank's World Development Indicators (WDI) database. A panel data analysis was applied to the five countries, representing both developed (Germany, Japan) and developing (India, Brazil, South Africa) economies, to allow cross-country comparison.

Data were collected for four key variables: life expectancy at birth (dependent variable), education expenditure (% of GDP), health expenditure (% of GDP), and GDP per capita (constant 2015 US$). Data were extracted directly from the WDI database and organized into a panel dataset covering 12 years (2010–2021), yielding 60 country-year observations.

The analysis continued in four stages. First, descriptive statistics and graphical representations were employed to identify patterns and country-specific differences. Second, correlation analysis was conducted to assess the strength and direction of bivariate relationships between life expectancy and the explanatory variables. Third, panel regression models both fixed effects and random effects were estimated to test the impact of education and health expenditure while controlling for income levels. Finally, interaction models and

time dummies were introduced to capture heterogeneity across countries and to account for temporal shocks such as health crises.

Results And Discussion

This section presents the outcomes of our descriptive, regression, and correlation analyses, as well as their visual representations.

The Descriptive Analysis

CountryName | life_e~y educat~g health~g gdp_pc

Table 1. Country name in life, education, and GDP classification

Brazil	75.09	5.77	8.71	11625.00
	0.84	0.20	0.25	319.45
	73.90	5.50	8.30	11000.00
	76.50	6.10	9.10	12100.00
Germany	80.77	5.05	11.44	42068.71
	0.36	0.24	0.68	1685.64
	79.99	4.84	10.78	38517.44
	81.29	5.59	12.90	44207.63
India	69.00	4.05	3.32	1616.00
	1.26	0.33	0.28	264.63
	67.16	3.38	2.86	1235.16
	70.75	4.64	3.75	1965.31
Japan	83.92	3.66	10.54	42750.00
	0.61	0.12	0.29	1802.78
	82.90	3.50	10.10	40000.00
	84.70	3.90	11.00	5500.00
South	59.40	6.36	8.76	7800.00
	1.27	0.28	0.25	185.86

	57.50	5.90	8.40	7500.00
	61.30	6.80	9.20	8100.00
Total	73.63	4.98	8.55	21171.94
	8.87	1.05	2.87	17815.14
	57.50	3.38	2.86	1235.16
	84.70	6.80	12.90	45500.00

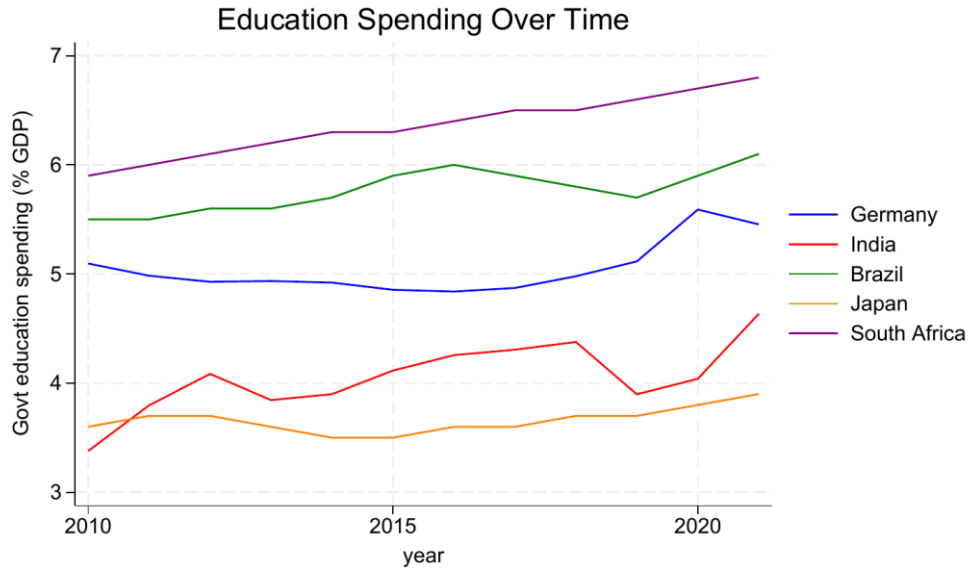
Table 1 explain that The interpretation of the above descriptive analysis includes four variables: health expenditure, education expenditure, life expectancy, and GDP per capita. Also, it shows a clear difference across all the countries. Japan and Germany have the highest life expectancy, being 83.92 years and 80.77 years respectively, with a high health spending and high GDP per Capita, evidence that public expenditure is more evident in developed countries than developing ones.

Brazil and south Africa have almost the same level of spending on education and health i.e. 5.77% & 8.71% and 6.36% & 8.76% thou south Africa has a higher public spending on education and health Brazil's GDP per capita is higher due to contributing factors such as economic structure, currency devaluation more prone to affect south Africa, unequal distribution of resources and structural unemployment this resulting to higher life expectancy in Brazil over South Africa that is 75.09yrs and 59.40yrs.

India has the lowest health education spending, 3.32%, resulting to a moderate life expectancy of 69 years and a 4.04% on education, resulting to the lower GDP per capita across all 5 countries. Again, this could be because of the economic structure, the labor market, and the demographic structure.

Visual Presentation

Figure 1. Education Spending overtime



JIAN (Jurnal Ilmiah Administrasi Negara): Vol. 9 No. 2 (2025), 175-189
e-ISSN: 2549-3566 p-ISSN: 2459-9786
URL : https://ojs.ejournalunigoro.com/index.php/JIAN

figure 2 shows that This is a line graph representing the percentage of public expenditure across the 5 countries with a 5-year gap. Germany and Japan showed a steadily growing expenditure over the years 2010 to 2015. Brazil steadily increased in spending on education and which dropped a bit probably in 2016 to 2018, and a slight increase in 2019 to 2020. In South Africa public spending on education progressively increased throughout the study period. India is the fastest growing in terms of government expenditure on education over the years.

Figure 2. Education Spending Vs Life Expectancy

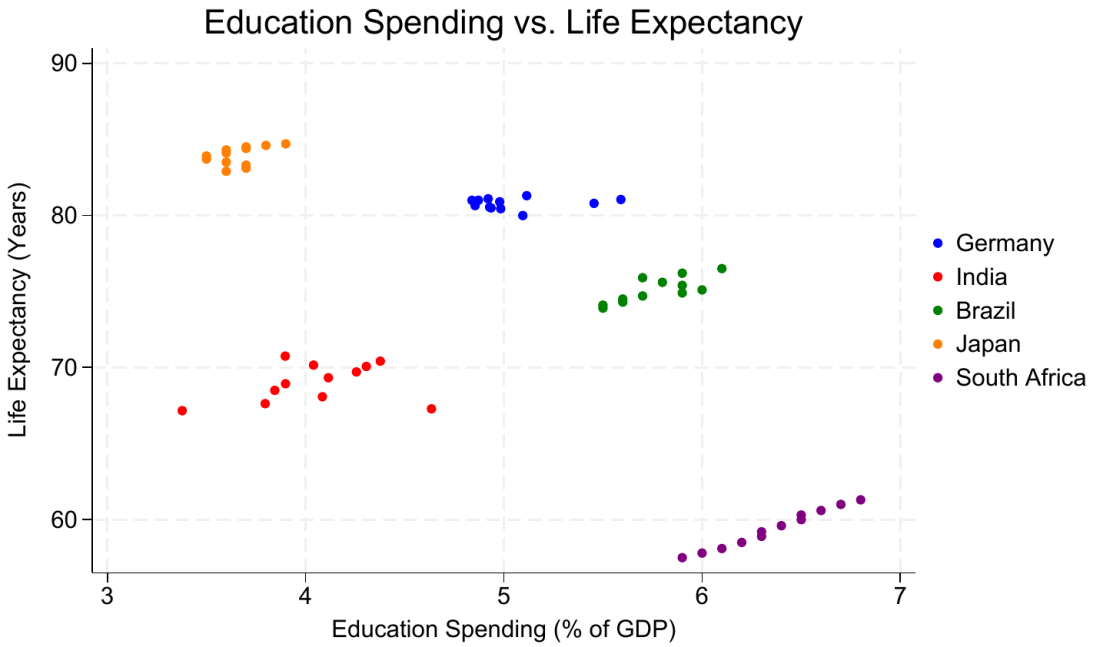


Figure 2 shows that This is a scatter plot graph with 5 countries as in indicated showing that for Germany and Japan there is a weak relation between the effects of education spending on life expectancy in the case of South Africa and Brazil show an upward trend which indicates a positive relationship between government expenditure on education and increase in life expectancy, India shows low expenditure on education relating to less health outcomes i.e. a life expectancy below 70yrs.

Figure 3. Health Spending over time

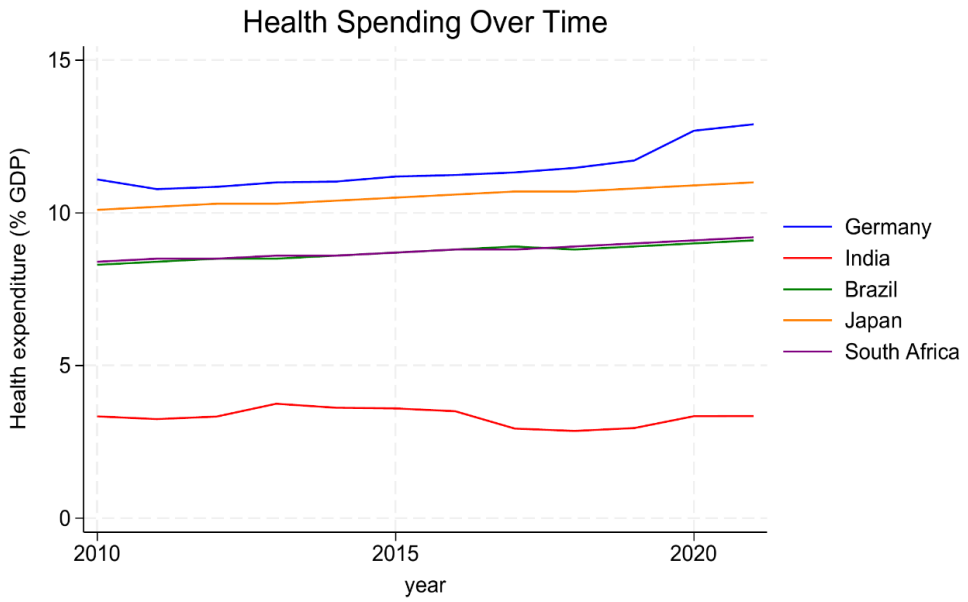


Figure 3 shows that This line graph illustrates that Brazil and south Africa have the same similar public spending on health which approximately is between 8%-9% and this outlay shows a moderate level of spending across both countries. Germany and Japan shows the highest health expenditure over the decade across all the countries. India has the lowest health expenditure around 3-4% of the GDP over the decade and this explain why it has a lower life expectancy.

Figure 4. Health Spending Vs Life Expectancy

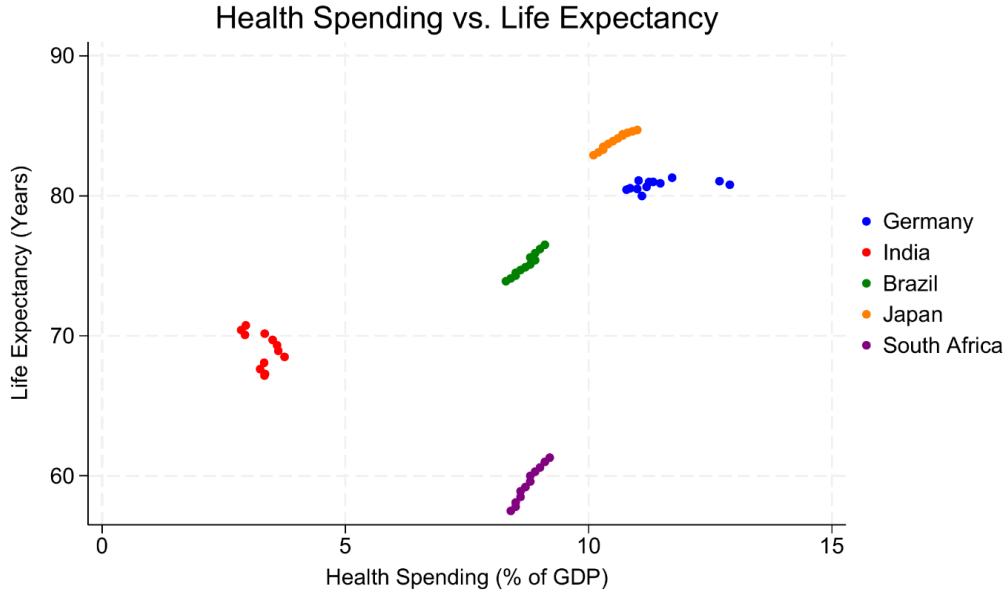


Figure 4 explain that This scatter plot shows the effects of health spending on the life expectancy of the above-mentioned countries in 2 decades. Japan and Germany relatively show that a higher spending in health results to life longevity as seen here the spending approximately between 10-12% resulting to the highest life expectancy across the countries

which is around 80-85yrs. Both Brazil and south Africa shows a moderate public expenditure on health between 8-9% but different life expectancy results as south Africa has a much lower life expectancy which could be because of inefficient allocation of health care resources or disease outbreak could be the reason for the high expenditure on health. The lowest public expenditure on health was by India but resulting to a moderate life expectancy between 69-70yrs which could be because they get better health care systems over South Africa.

Correlation Analysis

Table 2. Correlation Results
The Significance (P<0.05)

Variable	life_e~y	educat~g	health~g	gdp_pc
life_expec~y	1.000			
education_~g	-0.584*	1.000		
P Value=	0.000			
health_spe~g	0.505*	0.207	1.000	
P Value =	0.000	0.112		
gdp_pc	0.824*	-0.377*	0.806*	1.000
P Value =	0.000	0.003	0.000	

GDP per Capita has a strong positive correlation with life expectancy as the r= 0.824 and a P Value < 0.05 indicating that countries with higher GDP tend to live longer as a result of better health care services better education system and infrastructural development example in the case of Japan and Germany both having high GDP and high public expenditure on.

Education Spending shows a negative correlation with life expectancy as the r=-0.584 and a P Value < 0.05 meaning a high spending on education does not necessarily increase the life expectancy of a country in the case of south Africa this could be as a result of inefficient and unequal distribution of resources and in Japan a 3.66% expenditure on education but yet the highest life expectancy across the 5 countries, Germany comes 2nd to Japan in terms of GDP per Capita the country also had a 5.05% expenditure on education.

Health spending positively correlates with life expectancy with an r=0.505 and a P Value<0.05 this shows that if the government spends on health the life expectancy of the country is expected to increase such as in the case of Germany, Japan and Brazil. An increase in health expenditure means better healthcare services, investment in technologies and quality

medication in the country. Thou south Africa had a higher health expenditure than Brazil yet a lower life expectancy which could be caused by the inefficient allocation of resources.

Education and GDP are negatively correlated with an r =-0.377 and a P Value<0.05 meaning base on the findings expenditure on education does not result to a higher GDP in the given countries above example in the case of japan it has the highest GDP but the lowest government expenditure on education as it could mean already developed countries put their priority elsewhere than much investment in education and Japan is an industry dominated country highly into manufacturing more productivity is achieved with better health status of the employees.

Regression Analysis

Dependent variable = Life expectancy
Country= 5 countries (Germany, India, Brazil, Japan and South Africa)
OBS=60 (12 per country)
R^2 (Within): 0.719 i.e. a 72% variance in life expectancy within the countries over time.
Probe > F: 0.000 this means that the model is statistically significant overall.
Rho=0.997: a high variation across countries.

a. Fixed Effect Regression

Table 3. Fixed Effect Regression

life_expectancy	Coefficient	Std. err.	t Value	P>|t|	[95% conf.	interval]
education_spend	.574	.501	1.15	0.258	-.436	1.584
health_spending	-.526	.278	-1.89	0.065	-1.088	.0345
year						
2011	.252	.364	0.69	0.492	-.483	.988
2012	.492	.373	1.32	0.195	-.261	1.244
2013	.823	.371	2.22	0.032	.075	1.571
2014	1.184	.374	3.17	0.003	.429	1.939
2015	1.319	.387	3.41	0.001	.538	2.100
2016	1.604	.405	3.96	0.000	.788	2.421
2017	1.817	.405	4.49	0.000	.100	2.634
2018	1.973	.413	4.78	0.000	1.139	2.807
2019	2.366	.407	5.81	0.000	1.544	3.188
2020	2.416	.483	5.00	0.000	1.440	3.391

2021	1.889	.543	3.48	0.001	.791	2.982
_cons	73.94	3.191	23.17	0.000	67.496	80.375

Table 3 explains that education spending has a positive coefficient of 0.574, but it is not statistically significant with a P Value 0.258>0.05, meaning that education spending does not a meaningful impact across the countries above no effect on the GDP.

Health expenditure has a negative coefficient of −0.5264 and is weakly statistically significant with a P Value of 0.065>0.05 i.e., there is a possible effect of this variable on the dependent variable, explaining that countries with a lower life expectancy, but higher health spending, probably made that expenditure during health crisis or disease outbreaks example, during Covid or Ebola in south Africa.

The time fixed effects show a positive trend in life expectancy across the countries from the year 2013 to 2021, as all the variables are statistically significant, showing a positive effect of the variables on the dependent variable, i.e., P Value<0.05.

In the case of 2011 and 2012, they have positive coefficients but not statistically significant, 0.492 & 0.195, both greater than 0.05, so there was no major impact of the variables on life expectancy in these given years, and the constant reflects the baseline life expectancy in 2010.

Dependent variable = Life expectancy
Country 5 countries (Germany, India, Brazil, Japan, and South Africa)
OBS=60 (12 per country)
R-Squared**:** 0.7160
Prob > F: 0.000. This means that the model is statistically significant overall.

b. The Random Effects Model

Table 4. The Random Effects Model

life_expecta~y	Coefficient	Std. err.	z	P>|z|	[95% conf. interval]	
education_sp~g	1.346	1.300	1.04	0.299	-1.195	3.886
health_spend~g	1.270	.168	7.55	0.000	.941	1.600
year						
2011	.507	1.188	0.43	0.669	-1.821	2.835
2012	.528	1.222	0.43	0.666	-1.868	2.923

2013	I	.513	1.178	0.44	0.663	-1.796	2.821
2014	I	1.068	1.183	0.90	0.367	-1.252	3.387
2015	I	.850	1.202	0.71	0.479	-1.505	3.205
2016	I	1.157	1.225	0.94	0.345	-1.244	3.558
2017	I	1.590	1.256	1.27	0.206	-.873	4.052
2018	I	1.549	1.301	1.19	0.234	-1.001	4.100
2019	I	1.931	1.211	1.59	0.111	-.442	4.305
2020	I	.230	1.322	0.17	0.862	-2.362	2.821
2021	I	-1.780	1.476	-1.21	0.228	-4.672	1.113
_cons	I	58.708	4.451	13.19	0.000	49.985	67.430

Table 4 shows that This analysis shows that health and education expenditure do not directly affect life expectancy and this could be because it involves other important variables or measurement issues. From 2013 it showed improved results of life expectancy.

c. The Interaction Model Effect

Main Effect

Table 5. Main Effect

Variable	Coefficient	Std. Error	t-value	P>|t|	95% Confidence Interval
Education Spending	-1.140	1.742	-0.65	0.517	-4.679, 2.400
Health Spending	0.933	1.542	0.60	0.549	-2.202, 4.067
Germany	9.275	8.769	1.06	0.298	-8.545, 27.095
India	3.806	8.340	0.46	0.651	-13.142, 20.754
Japan	13.885	7.636	1.82	0.078	-1.632, 29.403
South Africa	-39.310	11.772	-3.34	0.002	-63.233, -15.387

Table 5 shows that The findings show that education spending is not statistically significant in reference to the baseline country (Brazil) there is -1.14 decrease in life expectancy in every 1% increase in government spending on education.

Health spending also proves to be statistically insignificant with a P Value of 0.549.

Germany has an average of 9.3yrs higher life expectancy of that of Brazil the reference country also not statistically significant with a P Value >0.05 i.e. 0.298 which could be as the result of the size of the population meanwhile Japan's life expectancy is 14yrs higher than the baseline country on averages a marginal significance. India also turns out to be statistically insignificant with a 3.8yrs higher life expectancy over Brazil with a P=0.651, South Africa has a 39yrs lower life expectancy over Brazil and this indicates it could be because health and economic challenges.

The interaction between education spending

Table 6. The interaction between education spending

Country	Coefficient	Std. Error	t-value	P>|t|	95% Confidence Interval
Germany	4.139	2.734	1.51	0.139	-1.416,9.695
India	0.132	1.787	0.07	0.942	-3.500, 3.763
Japan	3.327	2.652	1.25	0.218	-2.063, 8.717
South Africa	-1.259	3.304	-0.38	0.705	-7.973, 5.455

Table 6 shows that in the given data above there is a positive possibility of education spending increasing life expectancy in Germany, India, and Japan than in Brazil but not certain as it is statistically not significant in contrast, South Africa indicates education spending has no impact on life expectancy.

The Interaction between Health Spending

Table 7. The Interaction between Health Spending

Country	Coefficient	Std. Error	t-value	P>|t|	95% Confidence Interval
Germany	-2.435	1.472	-1.65	0.107	-5.428, 0.557
India	-2.218	1.776	-1.25	0.220	-5.826, 1.391
Japan	-2.025	1.504	-1.35	0.187	-5.081, 1.032
South Africa	3.682	3.435	1.07	0.291	-3.298, 10.663

Table 7 explains that The data presents that Germany, India and Japan have a lower outcome or the possibility of health spending to have an impactful meaning on increase in life expenditure compared to Brazil meanwhile South Africa has a better outcome of health expenditure on life expectancy than Brazil. And all tests prove to be statistically insignificant.

Year Dummies

Table 8. Year Dummies

Year	Coefficient	Std. Error	t-value	P>|t|	95% Confidence Interval
2011	0.270	0.318	0.85	0.402	-0.376, 0.915
2012	0.730	0.366	1.99	0.054	-0.014, 1.475
2013	1.064	0.370	2.88	0.007	0.312, 1.816
2014	1.542	0.429	3.60	0.001	0.671, 2.414
2015	1.754	0.496	3.54	0.001	0.747, 2.761
2016	2.029	0.552	3.67	0.001	0.906, 3.15
2017	2.179	0.609	3.59	0.001	0.946, 3.412
2018	2.182	0.579	3.77	0.001	1.006, 3.359
2019	2.323	0.571	4.07	0.000	1.164, 3.483
2020	2.413	0.633	3.81	0.001	1.127, 3.698
2021	2.154	0.794	2.71	0.010	0.540, 3.768
Constant	71.989	8.885	8.10	0.000	53.932, 90.047

Table 8 shows that compared to the base year 2010, from 2013 to 2021 shows impressive progress on life expectancy as in the public spending on education and health irrespective of the country improved and all the tests were statistically significant P Value<0.05. for 2011 and 2012 life expectancy slightly increased by 0.27% and 0.73% from 2010, a P =0.402 for 2011 which is statistically insignificant as we cannot say if there was really an increase in the life expectancy or not. A P=0.054 for 2011 this is above the significance level of 0.05 we could say its marginally significant and there could be an increase in life expectancy from 2010 to 2012.

Discussion

From the data finding results show that public spending on education does not have a meaning impact on the life expectancy of a country such as in the case of Germany and japan having the highest life expectancy but also among the least spent expenditure on education.

The expenditure on health correlation with life expectancy positively agrees to having a significant effect on life expectancy of the given countries looking at Germany and japan again health expenditure relates to a higher longevity. Reaching to a conclusion that public expenditure on health is what has a more meaning impact on life expectancy across the 5 countries than education except in the case of south Africa and this could be as a result of inefficient allocation of resources, or disease outbreak that lead to increase in health spending leading to Germany and japan having better outcomes due to heath expenditure followed by brazil, India and south Africa.

Over the time trends life expectancy across all the countries progressively improved from the year 2013-2021 in reference to the base year 2010 the year 2011-2012 increased as well but at a very small gap.

According to (Emanuela Baldacci, Benedict Clement , Sanjeev Gupta, Qiang cui, 2008) also indicated that an increase in public expenditure on education and health relates to economic performance that is the expected outcome but this can be restricted when there is inefficient utilization or allocation of resources and this perfectly explains why south Africa has a lower life expectancy compared to Brazil bad governance can also be a major factor.

Conclusion

The primary purpose of the study was to assess the outcome or impact of public spending on education and health in five countries: Germany, Japan, India, Brazil, and South Africa, using data from WDI between 2010-2021 through graphical representation, descriptive, correlation, and regression analysis.

The findings showed a positive correlation between public health spending and life expectancy, while expenditure on education showed no significant effect on life expectancy. While Germany and Japan had more investment in health, they achieved an impressive outcome. Brazil also moderately invested in health. Meanwhile, India and South Africa lag behind in terms of life expectancy for India because of underinvestment, while South Africa has moderately invested, but probably due to certain economic factors, it is still lagging.

The paper has gone in depth to provide the outcomes of public expenditure on health and education in both developing and developed countries. Further suggestions using a few more variables, like disease burden, infant mortality, is recommended for more insightful data presentation. Here are the policy recommendations

- Efficient and effective health care systems- in the case of South Africa and India, when the government invests in health care and ensures efficient service delivery, the life expectancy of the country would increase.
- Improvement of Public expenditure in the health care services- increases the longevity of that country. In the case of India, the government should scale up its level of health spending, which would help close up the gap in the outcomes.
- Investment in education- thou the impact education has on life expectancy is insignificant in this model if the government invests in education can result in indirect benefits contributing to life expectancy, such as health literacy and preventive measures to avoid disease.

Limitation

In as much as this study provides meaning insights into public spending on life expectancy the paper has limitations.

- Limited Sample Size: The analysis covers only five countries this restricts the generalizability of the findings. Although these countries were selected to represent both developed and developing economies, a larger sample might reveal more diverse patterns and stronger statistical significance.

- Variables: Important factors such as nutrition, disease burden (e.g., HIV/AIDS), environmental conditions, quality of governance, access to healthcare, and population density were not included due to limited data availability. These variables could significantly affect life expectancy and may confound the effects of public spending

References

Barro, R. J. (1996). Determinants of Economic Growth H a Cross Country Emprical Study. *Determinants of Economic Growth H a Cross Country Emprical Study.*

Emanuela Baldacci, Benedict Clement , Sanjeev Gupta, Qiang cui. (2008). Social Spending, Human Capital, and Growth in Developing Countries. *Social Spending, Human Capital, and Growth in Developing Countries*.

Gladys Lopez-Acevedo, S. A. (2000). The Distribution of Mexico's Public Spending On Education. *The Distribution of Mexico's Public Spending On Education*.

Kaushalendra Kumar, Faujdar Ram, Abhishek Singh. (2013, January 9). Public Spending and Childhood Mortality in India. *Public Spending and Childhood Mortality in India*. Retrieved from https://mpra.ub.uni-muenchen.de/48680/

Michaela Onofrei, A. F. (2021). Government Health Expenditure and Public Health Outcomes: A Comparative Study among EU Developing Countries. (J. T. Efird, Ed.) *Government Health Expenditure and Public Health Outcomes: A Comparative Study among EU Developing Countries*.

Millin, M. W. (2019). AN ANALYSIS OF PUBLIC SPENDING ON EDUCATION. *AN ANALYSIS OF PUBLIC SPENDING ON EDUCATION*.

Peter Lanjouw, M. P. (2001). Poverty, Education, and Health In Indonesia. *Who Benefits from Public Spending?*

Sanjeev Gupta, M. V. (2002). The effectiveness of government spending on education and health care in developing and transition economies. *European Journal of Political Economy*.

.