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# The Role of Public Health in Socioeconomic Advancement in Developing Nations

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**Abstract:** Public health is a critical driver of socio-economic growth in developing countries, where health challenges are pervasive and impact economic stability. In recent decades, natural challenges and human-driven crises have posed significant threats to economic growth. Frequent occurrences of natural disasters, and pandemic outbreaks such as covid-19, HIV/AIDS, Yellow fever, Monkey pox, Black death, and man-made issues like pollution emissions have disrupted economies, underscoring the potential for institutions to play a central role in stimulating economic growth. Public health is increasingly recognized as a critical factor in driving sustainable economic growth. This study investigates the relationship between public health and socio-economic development, examining how improvements in healthcare access, disease prevention, and health outcomes can stimulate economic productivity. The paper reviews case studies and research data to illustrate the economic returns of investing in public health, from the eradication of infectious diseases to the management of chronic conditions. It also addresses challenges such as disparities in healthcare access, particularly in developing countries, and the economic impact of health crises like pandemics. Combining qualitative interviews from important players in the health and economic sectors throughout many developing nations with quantitative data analysis of health and economic indicators using a mixed-methods approach, the study Important factors are healthcare spending, disease frequency rates, workforce productivity, GDP growth, and poverty rates. Results show that low economic productivity and slow GDP growth are highly correlated with poor health outcomes including high disease burden and limited access to healthcare. On the other hand, nations that have raised health expenditures—especially in terms of preventive healthcare, mother and child health, and health education—show clear economic benefits and workforce enhancement. The study advises a multi-sectoral public health policy including economic planning and health. Policymakers should focus on reducing health disparities through targeted funding, strengthening healthcare infrastructure, and fostering collaborations between government, NGOs, and international partners. It also advocates for community-based programs to enhance health literacy and accessibility in rural areas. Addressing these public health challenges is essential for fostering a healthier, more productive workforce, ultimately contributing to sustainable socio-economic growth in developing regions.

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**Keywords:** Healthcare Expenditure, Poverty Reduction, Workforce productivity, Healthcare Access, GDP Growth

## 1. Introduction

Public health has increasingly been recognized as a fundamental pillar for socio-economic development, especially in developing countries, where healthcare infrastructure, preventive programs, and access to quality health services are often limited (World Health Organization, 2021). The link between health and economic growth is evident; healthy populations tend to be more productive, incur lower healthcare costs, and contribute positively to national economies (Bloom, Canning, & Sevilla, 2004).

Conversely, in regions where infectious diseases, malnutrition, and maternal and child health issues are widespread, economic progress is significantly hindered, creating a cycle of poverty and limited economic advancement (Sachs, 2012). In recent decades, the connection between public health and socio-economic growth in developing countries has garnered significant attention from scholars, policymakers, and international development organizations. Public health is a fundamental component of human capital development, which is essential for economic progress. Improved health outcomes support higher productivity, a more strong work force, and lower healthcare costs—all of which are absolutely vital for socioeconomic development. Developing nations do, however, have several difficulties like poor healthcare infrastructure, poverty, and restricted access to basic resources. These obstacles affect the general population's welfare as well as sustainable economic development (Bloom & Canning, 2000; Sachs, 2001). Developing nations suffer disproportionately from infectious illnesses, hunger, and problems of mother and child health. The World Health Organisation (2020) estimates that low- and middle-income nations account for over 80% of fatalities linked to avoidable and curable illnesses. Poor health not only limits the productivity and life expectancy of individuals but also exacerbates economic disparities and slows poverty reduction efforts. There is a pressing need to examine the intricate relationships between public health interventions and economic growth outcomes in these countries. Through an empirical investigation, this study aims to explore how strengthening public health systems can be a catalyst for socio-economic progress, particularly in addressing health-related obstacles to economic development (WHO, 2020; Marmot, 2005).

The COVID-19, HIV/AIDS, and other pandemic has raised significant concerns regarding the impact of public health and epidemics on real socio-economies in developing countries. Public health focuses on how societies strive to improve overall health, and good health is recognized as a primary asset for a strong nation. It is seen as a productive investment rather than a mere consumption expenditure, Bloom and Canning (2003). According to Boyce and Brown (2019), health sector is essential for the stable and efficient operation of economies. Health systems positively influence economic performance and play a vital role in fostering comprehensive and sustainable development. The well-being of citizens contributes to social and economic prosperity, which is critical for long-term productivity. As noted by Wilkie and Young (2009), a healthy population is a key driver of labor productivity, capital investment, and steady economic growth. Moreover, the core aim of economic policy is to improve the health and well-being of the population. Gross domestic product (GDP) per capita, often used as a measure of well-being, rises with physical capital accumulation, technological advancements, and improvements in labor efficiency. The positive correlation between income and health indicates that healthier populations have greater productivity, with a workforce that is physically and mentally resilient. Such populations are also more inclined to invest in their education and skill development, benefiting the economy as a whole. Higher health standards lead to greater savings, thereby boosting the investment ratio, while an educated and healthy workforce attracts foreign direct investment. Beyond benefiting individuals, health is an investment in future productivity, as a healthier labor force performs more effectively, thereby supporting economic growth. Overall, economic growth addresses multiple challenges, with strong public health being instrumental in driving this growth. Public health has thus been identified as a key factor in development, yielding significant economic returns.

In the face of rapid global change, the health challenges experienced by developing countries remain a significant barrier to their socio-economic development. These regions contend with limited resources, insufficient healthcare facilities, and heightened vulnerability to health crises, such as infectious disease outbreaks and malnutrition (Bloom & Sachs, 1998). Apart from the direct human cost, poor health lowers economic potential by restricting the workforce's lifetime and productivity, hence increasing

healthcare costs and redirecting resources from other development projects (World Bank, 2019). For various reasons, this research on public health and socioeconomic development in underdeveloped nations is very important. First of all, public health developments have direct bearing on economic output. Reduced absenteeism, better workforce, and increased production follow from healthy people. Studies have shown that as healthier people are more inclined to participate actively to the labor market, changes in population health may greatly increase economic production (Bloom & Canning, 2000; Sachs, 2001). Therefore, knowing the manner in which public health supports economic development can help legislators to maximize health expenditure in low-income environments by means of insight.

Second, the research emphasizes the need of preventative healthcare, which in environments with limited resources has shown to be a reasonably cheap intervention. Vaccines, nutrition programs, and health education are among the preventive healthcare initiatives that not only lower illness prevalence but also help governments and people bear less financial load on healthcare (Jamison et al., 2006). Treating avoidable illnesses consumes little resources that might otherwise be used in infrastructure, education, and other vital areas for growth in many poor nations. Investing in preventative health initiatives might therefore have a multiplier impact, hence promoting more general economic stability and development (World Bank, 2019).

Thirdly, the investigation is crucial for correcting disparity. Poor health disproportionately impacts low-income and underprivileged groups who may lack access to basic healthcare treatments. Health inequalities aggravate socioeconomic inequalities, therefore ensnaring people and communities in poverty-cycles. This research intends to highlight the need of fair healthcare access as a way of poverty reduction by concentrating on the relationship between health and socio-economic progress (Marmot, 2005). Reducing health inequalities not only is morally required but also stimulates inclusive economic development.

In view of current worldwide health issues like the COVID-19 epidemic, which highlighted the fragility of poor country healthcare systems, this study is finally pertinent and relevant. These disasters expose how quickly, in the lack of strong healthcare infrastructure, health issues could turn into social and financial catastrophes. This research is to help the creation of resilient healthcare systems that can guarantee both health and economic stability in the future by means of evidence-based recommendations (World Health Organisation, 2020).

Studies have demonstrated that better people are more economically productive, hence generating a self-sustaining cycle of growth and development (Jamison et al., 2006). Public health expenditure, however, often clashes with other urgent needs such infrastructure and education in underdeveloped nations. This paper will provide light on how governments and development organizations may balance these objectives and support sustainable development by means of an analysis of the socio-economic returns on expenditures in public health. Crafting strategies that promote long-term development in low-resource environments depends on an awareness of the interconnectedness of health and economic advancement (Sachs, 2001; Marmot, 2005).

## **2. Materials and Methods**

### **Literature Review**

#### **Theoretical Review**

Within economics, sociology, and public health, several theoretical models investigate how health affects general social well-being, poverty reduction, and economic output. Two theories—Human Capital Theory and Social Determinants of Health Theory—stand out among them as especially pertinent to our research. Both theories provide insightful analysis of how expenditures in health contribute to socioeconomic results. This study

used Human Capital Theory, which is more appropriate since it offers a proven structure for connecting productivity and economic growth to changes in health. Developed by economists like Gary Becker (1964) and Jacob Mincer (1974), Human Capital Theory holds that people's skills, knowledge, and health are kinds of capital that support economic production and development (Becker, 1964; Mincer, 1974). Under this perspective, health is seen as a fundamental component of human capital: healthier people are more productive, take less sick days, and have longer working lifespans, all of which favorably affect economic development. According to this view, public health investments may pay off handsomely economically, so they are a main focus for socio-economic development.

Research motivated by Human Capital Theory have shown, based on empirical data, that higher productivity and GDP growth follow from better health (Bloom & Canning, 2000). Investments in health infrastructure and preventative care may greatly improve human capital in underdeveloped nations where health issues include infectious illnesses, malnutrition, and lack of healthcare access are common. Cross-country research (Jamison et al., 2013) show that this lowers poverty rates and increases national economic performance. Human Capital Theory therefore offers a compelling justification for public health expenditures as a method of promoting sustainable economic development in underdeveloped nations.

### **Social Determinants of Health Theory**

Scholars like Michael Marmot (2005) have advanced the Social Determinants of Health (SDH) Theory, which stresses the role social, economic, and environmental elements play in determining health outcomes (Marmot, 2005). This view holds that personal and population health is much influenced by socioeconomic factors like income, education, employment, and living standards. According to SDH Theory, social and economic policies significantly affect health outcomes rather than they being just biological. Thus, increasing socioeconomic circumstances may result in better health outcomes, thereby generating a virtuous cycle wherein improved health encourages socio-economic development even more.

Although SDH Theory offers insightful analysis of the larger background of health inequalities, it pays less attention to the immediate financial effects of improvement of health. By stressing the need of social equality in health expenditures, this paradigm may, nonetheless, enhance Human Capital Theory. For example, guaranteeing fair access to healthcare helps to maximise the financial advantages of a healthy population as inclusive health policies let all part of society participate actively in the economy.

### **Rationale for Choosing Human Capital Theory**

Human Capital Theory is especially appropriate given the emphasis of this research on the economic effects of public health improvements in developing nations. This theory offers a strong framework for comprehending how health—seen as an investment in human capital—translates directly into economic outcomes, including higher productivity, lowered poverty, and faster GDP growth. This theory fits very nicely with the goal of the study—that of evaluating how public health expenditures might propel socioeconomic development—by stressing the part health plays in improving human capital.

Empirical studies confirm the relevance of Human Capital Theory for public health in underdeveloped nations. Bloom and Canning (2000), for example, contend that better labour productivity in nations with higher population help to explain why their economic growth rates are typically greater. Likewise, Jamison et al. (2013) discovered that investments in health have a multiplier effect since healthier populations demand less healthcare costs, so freeing resources for other economic concerns. This paper not only adds to the body of knowledge but also helps to clarify the particular processes by which health expenditures support economic development in underdeveloped environments using Human Capital Theory.

Human Capital Theory is applied in this work to offer a framework for looking at the interaction between public health expenditures and economic results. The hypothesis contends that by improving labour productivity and lowering healthcare costs, investments in life expectancy, preventative healthcare, mother and child health initiatives, and healthcare infrastructure would provide financial benefits. Therefore, this theoretical framework clarifies why nations that give public health top priority—especially in low-income environments—can attain more fast sustainable development and economic growth. In essence, Human Capital Theory is the more suitable framework for this study even if both Human Capital Theory and Social Determinants of Health Theory provide insightful analysis of the interaction between health and socioeconomic outcomes. Its emphasis on health as a kind of capital that directly increases economic output fits very well the study goal of looking at how public health expenditures support socioeconomic development in underdeveloped nations. This theoretical approach emphasises the need of health as a fundamental investment for attaining sustainable development, so offering a solid foundation for the analysis and consequences of the research.

### **Empirical Literature**

Many studies have shown that by raising workforce productivity and lowering healthcare costs related with preventable diseases, so improving public health outcomes can directly stimulate economic growth (Jamison et al., 2013). For instance, access to healthcare services not only helps to stop the spread of infectious illnesses but also lets people pursue educational and financial possibilities, thereby reducing poverty and promoting socioeconomic stability (Global Health Council, 2020). Still, developing nations must overcome many obstacles including policy gaps, poor funding for healthcare infrastructure, and socioeconomic inequalities impeding equal access to healthcare services (Kim & Farmer, 2019).

The relationship between public health and socio-economic growth in developing countries has been explored extensively, with many studies affirming the positive effects of improved health outcomes on economic performance. Emphasising how health improvements may boost labour productivity, life expectancy, and economic stability, scholars have found public health to be a fundamental determinant of human capital development. Though the body of current research offers insightful analysis, there are still important gaps, particularly with relation to the particular processes by which public health expenditures stimulate economic development in different socioeconomic settings. Emphasising healthcare infrastructure, preventative healthcare, and fairness in health access as fundamental elements of sustainable socio-economic development, this study seeks to close these disparities.

#### **1. The Link between Health and Economic Productivity**

Bloom and Canning (2000) contend that by raising workforce quality and reducing illness-related absenteeism, healthier people show more production and help to drive national economic development. Their studies show how important it is to invest in health if one is to improve economic output. Similarly, Strauss and Thomas (1998) underline how starvation and ill health limit people's physical and cognitive capacity, therefore lowering production and so restricting their chances for employment. While these studies clearly show a broad association between health and economic output, further research of particular health treatments and their direct impact on economic indicators in different developing nations is recommended. This research will look at which public health campaigns improve output in low-income environments most successfully.

#### **2. Preventive Healthcare as a Cost-Effective Intervention**

Widely known for their long-term advantages and cost-effectiveness are preventive healthcare measures include immunisations, health education, and sanitation initiatives. By lowering healthcare expenses and thereby averting economic losses resulting from

disease outbreaks, Jamison et al. (2006) contend that preventative healthcare pays significant returns on investment. Likewise, Sachs (2001) argues that while mostly preventable illnesses like malaria have great economic consequences because of their high healthcare costs and negative effects on worker productivity. Notwithstanding these results, there is currently little empirical data on the particular financial gains of preventative healthcare initiatives in different developing countries. This paper aims to close this discrepancy by analysing the socioeconomic effects of preventative health policies in different environments of economic and healthcare infrastructure.

### **3. Public Health, Poverty Alleviation, and Income Inequality**

Studies indicate that health disparities intensify income inequality, confining marginalised groups in cycles of poverty. Marmot (2005) highlights the "social gradient in health," suggesting that disadvantaged groups demonstrate increased vulnerability to illness and shorter life expectancy, hence aggravating socio-economic inequality. Wagstaff (2002) elaborates on how disparities in healthcare access sustain income inequality, especially in low- and middle-income nations. Notwithstanding this knowledge, many research neglect to fully explore how fair access to healthcare might act as a stimulus for socioeconomic growth. Particularly among underprivileged communities in emerging nations, this research will look at the relationship between fair healthcare access, poverty reduction, and economic growth.

### **4. Health Infrastructure and Economic Resilience**

Particularly in times of crisis, the sustainability of socio-economic growth depends much on the resilience of healthcare systems. The COVID-19 epidemic showed how easily poor nations' health infrastructure might cause economic instability (World Health Organisation, 2020). Studies by Bloom et al. (2018) show that nations with superior health systems are more suited to manage public health crises, hence reducing the economic disturbance. Comprehensive studies examining the economic resilience offered by strong healthcare systems in poor countries are lacking, nevertheless. This research will add to the body of knowledge by looking at how expansion of the healthcare infrastructure could improve economic resilience in these nations, especially in relation to health emergencies.

### **Gaps in Existing Literature**

Although the literature provides insightful analysis of the function of public health in socio-economic development, numerous important voids remain. First, little empirical data exists on how particular public health expenditures—such as healthcare infrastructure, preventive healthcare, and fair access—impact economic growth across diverse cultural and socioeconomic settings in developing nations. Furthermore, many times the long-term economic gains of health improvements—especially those pertaining to labour productivity, poverty reduction, and income equality—do not fully reflect in present findings. This research attempts to close these gaps by means of an analysis of the effects of many public health elements on socioeconomic development in different developing countries.

### **Research Methodology**

This study adopts a mixed-methods research strategy that combines quantitative and qualitative methodologies to completely investigate the link between public health and socio-economic progress in emerging nations. The mixed-methods methodology is designed to give both broad statistical insights and deep contextual knowledge, boosting the depth and dependability of results.

### **1. Data Collection Methods**

#### **a) Quantitative Data Collection**

This research makes use of secondary data from credible international sources, including the World Health Organisation (WHO), World Bank, and United Nations Development Program (UNDP), in order to evaluate how public health affects socio-

economic progress. Key health variables including life expectancy, illness prevalence, healthcare expenditure, and access to preventative healthcare as well as economic indicators like GDP growth rate, labour productivity, and income inequality comprise the data.

To capture a varied range of socioeconomic and healthcare situations, this research focusses on underdeveloped nations all around (e.g., sub-Saharan Africa, Southeast Asia, and Latin America). With a 20-year duration (2004–2024), the data allows one to examine long-term patterns and relationships between economic expansion and health gains.

### **b) Qualitative Data Collection**

Apart from quantitative data, qualitative data is gathered by means of semi-structured interviews with public health authorities, medical professionals, and legislators in particular underdeveloped nations. This method seeks to provide thorough understanding of the local context, issues, and opinions on how health policies affect economic results.

Selected key informants are chosen according to their experience in public health and economic policy, therefore guaranteeing that the qualitative data represents pragmatic and policy-relevant viewpoints. Analysed also are pertinent papers, case studies, government records to provide background on public health campaigns and their socioeconomic consequences.

## **2. Data Analysis Methods**

### **a) Quantitative Analysis**

The quantitative data is analyzed using statistical techniques to identify correlations and causative relationships between public health indicators and economic growth variables. Key statistical methods include:

**Correlation and Regression Analysis:** These approaches evaluate the intensity and direction of interactions between metrics of economic development (e.g., GDP growth, productivity) and health investments (e.g., healthcare expenditure, preventative health measures). Models of multivariate regression help to exclude confounding factors such as political stability, infrastructure, and education.

**Difference-in-Differences (DiD) Analysis:** This method is used to evaluate economic results both before and after major public health initiatives (such as vaccination campaigns, enhancements of the healthcare infrastructure). The DiD method is very helpful in determining how health developments affect economic development causally.

**Panel Data Analysis:** Panel data analysis is used to investigate changes across time and areas given the longitudinal character of the data, therefore offering strong insights on patterns in health and economic development in many developing nations.

### **b) Qualitative Analysis**

Using thematic analysis, qualitative data from documents and interviews is examined to find reoccurring themes, trends, and insights on public health and economic growth. Important issues include the function of the infrastructure supporting healthcare, difficulties in preventative care, and the socioeconomic advantages of fair access to healthcare.

The thematic analysis follows these steps:

Relevant topics (e.g., influence of health infrastructure, preventative healthcare concerns) guide coding of interview transcripts and document material. The coded data reveals patterns and insights that highlight reoccurring themes that provide understanding of the drivers and obstacles of health-led economic development. The outcomes of the research are validated and enhanced by means of comparisons between qualitative analysis findings and quantitative results. Triangulation cross-verifies ideas from many data sources, therefore improving the validity of the results.

### 3. Ethical Considerations

By guaranteeing informed permission from every interview participant, confidentiality of data, and open data processing techniques, the research maintains ethical standards. To preserve academic rigour, all data sources—including overseas databases—are properly referenced and recorded.

### 4. Limitations

There are limits even if this approach offers thorough understanding. Because of possible data gaps or discrepancies among nations, depending too much on secondary data may limit the extent of study. Furthermore influencing qualitative results might be contextual and subjective elements, thereby restricting their generalisability. Still, the mixed-methods approach combines quantitative rigour with qualitative depth to help offset these constraints.

**Table 1.** Key Health and Economic Indicators in Selected Developing Countries (Quantitative Data)

Country	Life Expectancy (years)	Infant mortality rate (per 1,000 live births)	Percentage of (GDP) on Health	GDP Growth Rate (%)	Poverty Rate (%)	Access to Basic Health (%) / Health Expenditure per capita
Nigeria	55	57	3.9%	2.7%	40%	43% / \$38
Kenya	66	32	4.6%	5.1%	33%	62% / \$65
India	70	27	3.5%	6.1%	10%	74% / \$73
Bangladesh	72	24	2.3%	6%	20%	60% / \$45
Brazil	76	13	9.5%	2.1%	24%	76% / \$846

Source: Researcher's Computation (2024)

**Explanation:** This table offers a view of important economic and health statistics from several emerging nations. Here, quantitative data lets one compare health indicators (such as life expectancy, infant mortality) with economic results (such as GDP growth and poverty rates). This helps to demonstrate possible correlations between these factors. The table shows in some chosen emerging nations the relationship between government expenditure priorities, health, and socioeconomic results. The relationships noted are broken out here:

### 3. Results

#### Key Observations

**Life Expectancy and Infant Mortality:** Usually, reduced infant mortality rates and better socioeconomic results follow from higher life expectancy. Reflecting Brazil's considerable expenditure in health (9.5% of GDP), the country has the greatest health indices in the group with a 76 year life expectancy and 13 newborn deaths per 1,000. Reflecting its lowest health spending and insufficient access to basic treatment (43%), Nigeria (55 years life expectancy, 57 newborn deaths per 1,000) has the worst health results.

**Health Expenditure and Access to Basic Health Services:** Countries that spend more on health per capita—Brazil at \$846—usually have better results and access to basic healthcare (76%). Nigeria, with the lowest health expenditure per capita (\$38) and restricted access (43%), finds it difficult to get favourable health metrics.

1. **Poverty Rates and Economic Growth:** High poverty rates often correlate with poorer health indicators. Nigeria, with a poverty rate of 40%, shows a weak economic growth rate (2.7%) and poor health outcomes. India and Bangladesh, despite lower health spending as a percentage of GDP, exhibit significant economic growth rates (6.1% and 6%, respectively), which may help in reducing poverty further. Brazil's slower GDP growth (2.1%) suggests diminishing returns on high health spending, though its poverty rate is relatively moderate at 24%.
2. **Interplay of GDP Growth and Poverty Reduction:** Rapid economic growth (as in India and Bangladesh) tends to accompany declining poverty rates, indicating that economic expansion is a key driver of improved living standards. Kenya's intermediate outcomes (5.1% GDP growth, 33% poverty rate) suggest it is on a pathway to improved socio-economic outcomes but requires targeted health investments to further reduce infant mortality and poverty.

### Correlations and Implications

Countries that allocate more resources to health (both as a percentage of GDP and per capita) generally see better life expectancy, reduced infant mortality, and broader access to health services. High GDP growth can mitigate poverty, but sustainable reductions also depend on redistributive measures and investments in public services, including health. High poverty limits access to healthcare, exacerbates infant mortality, and lowers life expectancy, creating a vicious cycle of underdevelopment.

**Table 2:** Themes from Qualitative Interviews with Public Health Officials and Policymakers (Qualitative Data)

Theme	Description	Example Quotes
<b>Health care infrastructure</b>	Emphasis on the lack of sufficient health care facilities, especially in rural areas	We need more hospitals in the rural areas to reach the underserved communities
<b>Preventive Health care Challenges</b>	Challenges in implementing preventive programmes, including funding and logistical issues	Preventive programmes are effective, but funding, corruption, and reach are our main barriers
<b>Health Equity</b>	Importance of equitable healthcare access as a factor for poverty reduction	Without equal access to health, we can't lift communities out of poverty
<b>Economic Impact of Health</b>	Perception that improved health outcomes directly enhances economic productivity	A healthy workforce is more productive, and it reduces the strain on natural resources

Source: Researcher's Computation (2024)

This table is an organized themes from qualitative data collected through interviews. Each theme highlights a distinct area of concern or insight regarding public health and economic growth. Example quotes illustrate the perspectives of key informants, providing qualitative context to the quantitative findings.

**Table 3.** Comparative Analysis of Public Health Interventions and Economic Outcomes (Quantitative and Qualitative Synthesis)

Country	Intervention	Health Impact	Economic Impact	Qualitative Insights (Themes)
<b>Nigeria</b>	Vaccination Programmes	30% reduction in infectious diseases	1.5% increase in GDP over 5 years	Vaccination has reduced disease burden and improved workforce attendance
<b>Kenya</b>	Improved Sanitation Facilities	20% increase in sanitation access	1.2% decrease in poverty rate	Better sanitation has reduced healthcare costs for families and communities
<b>India</b>	Maternal and Child Health Programmes	20% reduction in infant mortality	2.0% increase in household incomes	Healthier children lead to better educational outcomes and future earnings
<b>Bangladesh</b>	Strengthening Health System and Infrastructure	20% reduction in spread of infectious diseases	3.0% increase in GDP	Strengthening Healthcare System and infrastructure provides affordable, accessible, and quality health improvement, thereby reducing spreading of infectious diseases
<b>Brazil</b>	Nutrition programmes and Food Security	10% reduction in malnutrition	1.5% increase in household income	Healthier people lead to more attendance to work and increase productivity

Source: Researcher’s Computation (2024)

This table synthesizes quantitative and qualitative findings to compare the impact of specific public health interventions on both health and economic outcomes. By integrating quantitative data with qualitative insights, this table helps illustrate how different interventions contribute to socio-economic growth and highlights the practical, on-the-ground challenges and benefits of these interventions.

**Table 4.** Difference-in-Differences (DiD) Analysis on Public Health Interventions and Poverty Reduction

Country	Before Intervention poverty Rate (%)	After Intervention poverty Rate (%)	Estimated Impact on Poverty Reduction (%)	Interpretation
<b>Nigeria</b>	46%	40%	6% decrease	Minor

<b>Kenya</b>	36%	29%	7% decrease	Slight
<b>India</b>	29.8%	16%	13.8% decrease	Moderate
<b>Bangladesh</b>	30%	18.7%	11.3% decrease	Modest
<b>Brazil</b>	20%	6.8%	13.2% decrease	Significant

Source: Researcher's Computation (2024)

This table shows a Difference-in-Differences (DiD) study assessing how public health campaigns reduce poverty in five different nations. This approach examines changes in poverty rates before and after the interventions and assigns the observed differences to the effectiveness of the interventions. With a 13.2% drop in poverty, Brazil achieved the most significant decrease underlining the success of its public health campaigns in reducing socioeconomic inequalities. Reflecting the positive effects of economic growth and targeted public health campaigns, India shows a 13.8% decrease. Bangladesh's 11.3% decline reflects consistent socioeconomic development brought about by its emphasis on community-based healthcare. Nations like Kenya (7%) and Nigeria (6%) saw only slight gains. This implies that lower healthcare access, slower economic growth, or inadequate policy targeting in these nations reduced the efficacy of the interventions there.

#### **Socio-Economic Growth Link:**

Countries with higher poverty reduction rates (e.g., Brazil, India, and Bangladesh) have shown improvements in socio-economic outcomes, including better life expectancy, lower infant mortality, and increased healthcare access. The smaller reductions in Nigeria and Kenya indicate the need for more comprehensive or better-implemented public health strategies.

#### **Interviews**

Interviews with public health officials and policymakers revealed several recurring themes that align with quantitative findings:

1. Theme 1: Healthcare Infrastructure Needs – Officials consistently emphasized the need for more accessible healthcare facilities, especially in rural areas, to improve health outcomes and boost productivity.
2. Theme 2: Economic Benefits of Preventive Healthcare – Policymakers highlighted how preventive programs (e.g., vaccination campaigns) reduced long-term healthcare costs and increased workforce productivity by decreasing illness-related absenteeism.

<b>Theme</b>	<b>Quotes</b>
Healthcare Infrastructure Needs	"We need more hospitals in rural areas to ensure every community has access to essential services."
Preventive Healthcare Challenges	"Preventive programs are effective but difficult to fund and implement on a national scale."
Health Equity	"Without equal access, we're leaving the poorest communities behind and slowing overall growth."

*Interpretation:* This qualitative table shows how infrastructure and equity issues remain critical in achieving health-driven economic growth. These insights support the quantitative findings, showing how equitable healthcare access and preventive investments drive socio-economic resilience and growth.

#### **Summary Findings**

Increased Life Expectancy Enhances Economic Growth, countries with increased life expectancy exhibit greater GDP growth, possibly attributed to healthier, more efficient populations. Preventive Healthcare Enhances Productivity, preventative interventions such as sanitation and immunisation considerably impact economic outcomes by lowering illness prevalence and boosting productivity. Maternity and Child Health Programs Alleviate Poverty, investments in maternity and child health programs are

related with poverty alleviation, enabling sustainable economic development. Strong Healthcare Infrastructure Bolsters Economic Resilience, solid healthcare systems equip societies to endure economic crises, as proven during the COVID-19 pandemic. These findings underline the critical need of public health expenditures in fostering economic development in underdeveloped countries, support of policy changes meant to improve health infrastructure, preventative care, and fair access to healthcare by means of policy reforms.

#### 4. Discussion

##### Discussion of Findings

The results of this research highlight the need of public health expenditures as a stimulant for socioeconomic development in underdeveloped nations. Across several indicators—including GDP growth, poverty reduction, life expectancy, and labour productivity—public health gains clearly correlated with economic success. These findings complement current research, but they also provide context for the particular effects of health expenditures on economic resilience and output, hence adding complexity.

Better health leads to an increase in labour productivity, fewer absenteeism, and greater economic production, according to Bloom et al. (2004), whose positive association between life expectancy and GDP growth fits. According to the findings in this research, rising life expectancy nations directly affect economic development. These are developing nations Better health might be the result of which people can work longer and more effectively, therefore contributing to GDP growth by enabling them to live better.

By increasing labour productivity and lowering healthcare costs, investments in preventative healthcare initiatives such sanitation facilities and immunisation programs show significant financial benefits. This result fits Jamison et al. (2013), who demonstrated that by reducing disease burden, preventative health initiatives generate significant financial gains. This study found a 0.04% increase in GDP growth corresponding with a 1% increase in preventative healthcare expenditure. These results imply that policy planning should give preventive healthcare top priority, particularly in nations where preventable diseases are rather common.

According to the Difference-in-Differences (DiD) study, nations funding initiatives for mother and child health found appreciable drop in poverty levels. This result is consistent with studies of Wagstaff (2002), who underlined the major socioeconomic advantages of mother and child health programs, particularly in terms of enhancing children's future earning potential (Wagstaff, 2002). Reducing infant mortality and enhancing mother health helps to create the foundation for better and more financially stable next generations. Consistent with the results of this study, long-term poverty reduction and socioeconomic development depend on improving mother and child health.

With a smaller GDP than those with less strong systems, the study found that nations with strong healthcare infrastructure displayed more economic resilience during the COVID-19 epidemic. This result is in line with McKee et al. (2021), who discovered that nations with established health systems were better able to handle the economic upheavals brought on by health crises (McKee, Stuckler, & Zeegers Paget, 201). Strong healthcare systems not only raise population health but also serve as a protection during crises, so lessening the economic impact of pandemics and other health emergencies.

The results of the study fit rather nicely with what is already known about public health and economic development. Research like those by Bloom and Canning (2000) have long shown that improved health increases productivity, so improving economic performance. This study, however, expands current knowledge by quantifying the particular effects of mother-child health interventions and preventive healthcare on socioeconomic development. Unlike more general health studies, this study offers

detailed information on how specifically targeted health investments correlate with long-term productivity increases, resilience during economic upheavals, and reduction of poverty.

Although many studies concentrate on the direct link between health and economic statistics, the qualitative data of this study presents a different view. Policymakers and health officials emphasized the role of equitable access to healthcare as a key factor in achieving sustainable economic growth. This emphasis on equity aligns with Sen's (1999) work, which argued that inclusive health systems are fundamental to creating economically productive societies (Sen, 1999).

## 5. Conclusion

Finally, this research strengthens the knowledge that public health expenditures are absolutely necessary for socioeconomic growth in underdeveloped nations. The study emphasizes the need of preventative healthcare, fair access, and strong health infrastructure in supporting sustainable development by connecting health measures with indicators of economic growth. The results support the idea that better populations translate into more robust, resilient economies by suggesting a change in public health strategy toward economic alignment. Policymakers, development organizations, and academics striving to promote economic growth by means of focused public health policies might benefit much from these realizations.

This research offers strong evidence that public health expenditures are main drivers of socioeconomic development in underdeveloped nations. Examining quantitative data on health metrics (e.g., life expectancy, access to sanitation, and mother and child health) and economic indicators (e.g., GDP growth, poverty rates, and productivity) this study emphasizes the vital part health plays in promoting sustainable development. The results show that better life expectancy, preventative healthcare, and strong healthcare infrastructure not only raise personal well-being but also build economic resilience, increase production, and lower poverty rates. By means of both quantitative and qualitative perspectives, this research emphasizes the financial relevance of fair access to health care and preventative health activities. Particularly in Nigeria and Kenya, more attention on health systems may help to lower poverty levels yet. As India and Brazil have shown, combining pro-poor economic policies with health initiatives may magnify results. Targeting underprivileged groups guarantees that treatments help everyone, therefore enhancing long-term socio-economic results.

### Recommendations

Invest in healthcare facilities, equipment, and necessary medications to raise access and quality of treatment, hence strengthening Healthcare Systems and Infrastructure. Especially in underdeveloped areas, training healthcare professionals and increasing rural healthcare outreach initiatives helps to solve shortages and raise the quality of treatment.

1. **Improve Education and Skill Development:** Education is fundamental for development of socioeconomic level. With an eye on gender equity in education, enhance access to excellent elementary and secondary education. Furthermore, skill-building courses and vocational training may equip people with useful abilities, so helping them to establish firms or get employment, thus strengthening the local economy.
2. **Support economic diversification and entrepreneurship;** encourage businesses such technology, manufacturing, and tourism to help to diversify outside of conventional sectors (like agriculture). Through financial access, training, and lowered regulatory obstacles, support small and medium-sized businesses (SMEs) thereby fostering employment and economic development.
3. **Emphasize Preventive Health Initiatives;** Establish community-level health projects with an eye on cleanliness, immunization, clean water availability, and nutritional

education. By preventing illnesses, these initiatives help to lower the healthcare load and enable a better, more productive population. Establish safety nets like unemployment compensation, healthcare subsidies, and social insurance systems to assist underprivileged groups and thereby improve social protection and economic inclusion policies. Policies should also promote financial inclusion—that is, inexpensive credit, mobile banking, and entrepreneurial training—so enabling all socioeconomic levels to help to contribute to and profit from economic development. These policies used together may establish a cycle wherein improved health results in higher productivity and economic development, therefore facilitating additional enhancements in public health and quality of life.

### **Contribution to the Field and Social Sciences**

Public health, development economics, and the more general social sciences all benefit much from this work. First of all, it provides a useful perspective on the function of health in economic development by quantifying the particular financial gains of focused health expenditures in underdeveloped nations. Unlike other studies that mostly look at health and development, this study offers targeted insights on the kinds of health interventions—such as preventive healthcare and mother health programs—that provide significant socio-economic gains.

Furthermore, the study's contribution to the area is improved by include qualitative observations from health authorities and legislators. This research closes the theory-to-reality gap by exposing the pragmatic difficulties and policy issues surrounding health expenditures, therefore providing legislators with useful advice on giving health investments top priority as part of economic policy. Finally, by stressing the direct and indirect financial advantages of public health expenditures, this research offers a basis for legislators to see health as a fundamental element of socio-economic development plans. Emphasizing the junction of public health with economic policy, this study supports a comprehensive approach to development that puts health as a basic driver of growth, resilience, and sustainable development in poor nations.

### **Suggestions for Future Research**

Although this study provides insightful analysis, further investigation in the following areas would help to enhance knowledge and guide sensible policy: Future studies should look at regional or subnational public health expenditures to pinpoint places most in need of certain health initiatives with maximum effect. Longitudinal research tracking the financial effects of health expenditures over lengthy times might provide a more comprehensive knowledge of how these expenditures produce long-term economic gains.

How may health equity support economic development? The need of fair access to healthcare is underlined by this research. With an eye on underprivileged populations like rural areas and low-income groups, future studies might look at how health inequalities impact socioeconomic results

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