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The Impact of Health Sector Expenditures on Afghanistan's Economic Growth

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Abstract

This study investigates the impact of health sector expenditures on Afghanistan's economic growth over a two-decade period (2002–2021). The primary objective of this research is to assess how health-related expenditures have influenced economic growth in Afghanistan during the last twenty years. Since this is a quantitative study, secondary data have been collected from annual reports and databases of the World Bank (WDI), as well as from scholarly articles authored by reputable researchers. The collected data were analyzed using SPSS 25 software, applying a simple linear regression (OLS Regression) model. The statistical analysis reveals that the results of the t-test are significant, and the significance level (Sig.) of the F-test is also statistically meaningful at the 5% level, indicating the model is appropriate. The findings show that health sector expenditures explain approximately 42.5% of the changes in economic growth (GDP per capita), while the remaining 57.5% are explained by other variables not included in this model and represented as errors. Therefore, it is concluded that health expenditures have a positive impact on Afghanistan's economic growth, as improved public health contributes to increased productivity and workforce capacity.

Keywords: Economic growth, Health sector, Health services, Government expenditures.

Introduction

Economic growth plays a vital role in the social and economic development and self-sufficiency of a country. Various sectors such as agriculture, industry, trade, education, and health significantly contribute to achieving economic growth. Based on this, the current study aims to examine the impact of the health sector on Afghanistan’s economic growth. The health sector is considered one of the fundamental pillars for human capital development and for enhancing a country's productive capacity. Investment in the health sector not only improves the quality of life of citizens but also enhances employee productivity and output levels, ultimately contributing to economic growth.

In Afghanistan, due to decades of conflict and instability, the health sector has not received the necessary attention. However, in recent years, some investments have been made in this area,

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which have improved access to health services and reduced the prevalence of diseases. Still, more comprehensive development of the health sector is necessary at the national level, to reduce the outflow of financial resources currently spent by citizens seeking medical treatment abroad. Strengthening this sector could make Afghanistan more self-reliant in the field of healthcare.

Boachie (2015) revealed that the impact of the health sector on Ghana's economic growth during the period of 1982–2012. The results showed that in the short run, health expenditures, international trade, and physical capital positively influenced economic growth, while the effect of education was inconclusive. The study suggested that investment in the health sector is highly important for economic growth. Similarly, Usman and Nurudeen (2010) investigated the effect of government expenditure on Nigeria's economy using data from 1970 to 2008. The study included variables such as total government expenditure (TCAP), recurrent expenditure (TREC), education expenditure (EDU), transport and communication expenditure (TRACO), and health expenditure (HEL). The findings revealed that these variables collectively explained 58.97% of Nigeria's economic growth. Among them, total government expenditure, recurrent expenditure, and education expenditure had negative effects, whereas government expenditure on transport, communication, and health had a positive impact on economic growth.

Several other studies also support the positive influence of health sector spending on economic growth. This research aims to determine how health sector expenditures over the past two decades (2002–2021) have affected Afghanistan's economic growth. The findings are expected to help relevant health authorities take appropriate policy measures in the future.

Research Objective

To investigate the impact of health sector expenditures on Afghanistan's economic growth during the period from 2002 to 2021.

Research Question

What is the impact of health sector expenditures on Afghanistan's economic growth during the period from 2002 to 2021?

Review of Previous Literature

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The following table presents the per capita health expenditures (in USD) by the Afghan government from 2002 to 2021, along with the corresponding per capita Gross Domestic Product (GDP) of Afghanistan in each respective year.

Table 1: Government Health Expenditures and Per Capita Gross Domestic Product (GDP) in Afghanistan (2002–2021)

GDP per capita (current US$)	Domestic general government health expenditure per capita (current US$)	Year
182.174	0.152	2002
199.643	1.297	2003
221.831	1.186	2004
254.115	1.336	2005
274.015	1.355	2006
376.318	1.85	2007
382.534	2.447	2008
453.387	2.344	2009
562.499	2.55	2010
608.739	2.936	2011
653.417	2.284	2012
638.733	2.835	2013
626.513	2.986	2014
566.881	3.106	2015
523.053	3.122	2016
526.141	3.41	2017
492.091	2.773	2018
497.741	2.488	2019
512.055	6.131	2020
355.778	2.686	2021

Source**:** World Development Indicators (WDI) Database

According to Table 1, the average annual government health expenditures per capita in Afghanistan have shown a gradual increase from 2002 to 2021. Correspondingly, the country's per capita Gross Domestic Product (GDP) has also increased. This indicates a positive relationship between public health expenditures and economic growth, suggesting that higher investments in the health sector may contribute to improving the nation's economy. A more detailed statistical analysis under the findings section will further clarify the nature and strength of this relationship using econometric tests. In this context, relevant findings from previous empirical studies on similar topics are reviewed below.

Several studies have examined the relationship between health expenditures and economic growth. For instance, Usman and Nurudeen (2010) analyzed the impact of government expenditures on Nigeria's economy using data from 1970 to 2008. The study included variables such as total

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government expenditure (TCAP), recurrent expenditure (TREC), education expenditure (EDU), transport and communication expenditure (TRACO), and health expenditure (HEL). The results showed that these variables collectively explained 58.97% of the variation in Nigeria's economic growth. While total expenditure, recurrent expenditure, and education expenditure had a negative effect, spending on transport, communication, and health showed a positive impact on economic growth.

Similarly, Abdullah and Arabi (2013) explored the effect of human capital on Sudan's economic growth. The study analyzed variables such as school completion rates, investment in health and education, foreign direct investment (FDI), and the Human Development Index (HDI). The findings revealed that the quality of education had a significant influence on economic growth, and that total government expenditure negatively affected FDI. However, improvements in health quality showed a positive impact on economic growth.

In another study, Boachie (2015) examined the impact of the health sector on economic growth in Ghana during the period 1982–2012. The study found that in the short term, health expenditures, international trade, and increased physical capital positively contributed to economic growth, while the impact of education remained ambiguous. The study recommended increasing investment in the health sector as a means to stimulate economic development.

Likewise, Bukhari (2017) analyzed the relationship between investment in human capital and economic growth in Saudi Arabia. Focusing on per capita GDP, government health expenditures, educational investment, and physical capital, the study found a bidirectional relationship between health and economic growth. Razouq and Asardi (2017) conducted a study on the relationship between human capital and economic growth in Morocco. They used indicators such as life expectancy, infant mortality rate, and public health expenditure. Their findings showed that life expectancy and other health indicators positively influenced economic growth in Morocco.

Additionally, Shukla (2017) assessed the role of human capital in India over the period 1995–2014. Variables included GDP, per capita health expenditure, purchasing power parity (PPP), physical capital, and secondary school enrollment. The study revealed a positive correlation between human capital and economic growth. In a similar vein, Mitra (2018) investigated the impact of public investment in human and physical capital in Bangladesh. The results demonstrated that increased investments in health, education, physical capital, and life expectancy were associated with long-term income growth. Lastly, Imide (2019) analyzed the influence of education and health on Nigeria's economic growth, affirming the importance of human capital investment for sustainable economic development.

Overall, these studies highlight the crucial role of human capital investment especially in health and education—in promoting economic growth.

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Research Methodology

This study employs a quantitative research approach, utilizing secondary data collected from credible national and international sources for the period 2002 to 2021. Key data sources include the annual reports and databases of the World Bank (WDI), as well as scholarly articles and publications by prominent authors and researchers. Given the quantitative nature of this study, which is based on numerical data and the analysis of economic trends, the Ordinary Least Squares (OLS) regression model has been employed for data analysis. The collected data were processed and analyzed using SPSS version 25.

In this study, two variables are examined:

- **Independent variable (X):** Government expenditure in the health sector
- **Dependent variable (Y):** Economic growth of Afghanistan

The effect of health sector expenditure (X) on Afghanistan's economic growth (Y) is analyzed using the following regression model:

Economic Growth (Y) = $\beta_0 + \beta_1 X + U$

Where:

- **β_0 and β_1** are the regression coefficients (parameters),
- **Y** represents the economic growth of Afghanistan,
- **X** represents government expenditure in the health sector,
- **U** denotes the error term.

In this model, economic growth (Y) is the **dependent variable**, while health sector expenditure (X) is the **independent variable**, and the model aims to determine the influence of health spending (X) on economic growth (Y) in Afghanistan.

Research Findings

To assess the extent of government health sector expenditures and their impact on economic growth, data from the past two decades have been analyzed to evaluate the relationship between public health spending and the economic growth of Afghanistan.

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Answer for the Research Question

The analysis was conducted using a simple linear regression model (OLS Regression). The regression results are presented in the following table:

Table 2: Results of the Regression Analysis

Model Summary									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.652[a]	.425	.394	120.242	.425	13.329	1	18	.002
a. Predictors: (Constant), Domestic general government health expenditure per capita (current US$)									

The results of the regression model are presented in Table (2), which was selected for the study. The obtained results indicate a significant impact of health sector expenditures (independent variable) on Afghanistan's economic growth (dependent variable). The test results show that the chosen variables have a significant relationship with economic growth (GDP per capita, current US$) in Afghanistan during the period 2002-2021.

From the results in the above table, it is evident that health sector expenditures explain approximately 42.5% of the variance in economic growth (GDP per capita, current US$). The R-squared value shows the proportion of variance in the dependent variable explained by the independent variable, indicating that 42.5% of economic growth variance is explained by health sector spending. The remaining 57.5% of the variance is attributed to other variables not included in the model and is represented as error in the model.

Furthermore, the P-value obtained from the R-squared results in the above table is less than the 5% significance level. This implies that when the P-value is less than 0.05, the model between health sector expenditures (independent variable) and economic growth (dependent variable) fits well, and the results are statistically significant.

Table 3: Results of the Analysis of Variance (ANOVA)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192715.263	1	192715.263	13.329	.002[b]

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	Residual	260247.210	18	14458.178		
	Total	452962.473	19			

a. Dependent Variable: GDP per capita (current US$)

b. Predictors: (Constant), Domestic general government health expenditure per capita (current US$)

Table (3) presents the Model Fit results analyzed through ANOVA. According to the obtained results, the significance value (Sig.) is less than 0.05, specifically 0.002. This indicates that the model between health sector expenditures (independent variable) and economic growth (dependent variable) is well-fitted and the results are statistically significant. Therefore, the selected model appears to be appropriate and robust.

Moreover, based on the F-statistic and other statistical criteria, we can conclude that the chosen model for this study is suitable and effective. Generally, in simple linear regression, if the F-statistic value exceeds 4, the model is considered significant and valuable. Here, the F-statistic value is 13.329, which further confirms that the selected model is significant and reliable.

Table 4: Coefficients Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	238.171	62.803		3.792	.001
	Domestic general government health expenditure per capita (current US$)	84.109	23.038	.652	3.651	.002

a. Dependent Variable: GDP per capita (current US$)

Based on the data in Table 4, the T-test results and significance level (Sig./p-value) for health sector expenditures (independent variable) are provided. The significance level (Sig.) of health sector expenditures is less than 0.05, indicating that the independent variable (health sector expenditures) has a statistically significant effect on the dependent variable (economic growth).

According to Table 3, the beta coefficient for health sector expenditures is 0.652, showing a positive relationship with economic growth. This means that a one-unit increase in health sector expenditures leads to a 0.652 increase in economic growth. The results from the analysis of two decades clearly demonstrate that health sector expenditures have a positive impact on Afghanistan's

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economic growth. The independent variable (health sector expenditures) explains an improvement and enhancement in Afghanistan's economic growth.

Discussion

Considering the findings of the aforementioned studies, it can be concluded that expenditures in the health sector have a positive impact on Afghanistan's economic growth. In other words, investments in the health sector can lead to favorable changes in the country's economic development. Razzaq and Asardi (2017) examined the relationship between human capital and economic growth in Morocco. Indicators such as life expectancy, child mortality rate, and public health expenditures were used in their analysis. The study found that life expectancy and other health-related indicators positively affect economic growth in Morocco. These findings align with the results of our current research. Similarly, Boachie (2015) conducted a study assessing the impact of Ghana's health sector from 1982 to 2012. The results revealed that in the short term, increased health expenditures, international trade, and physical capital have a positive effect on economic growth. These outcomes are consistent with the findings of our study.

Conclusion

The purpose of this study was to investigate the impact of health sector expenditures on Afghanistan's economic growth. Data analysis results indicate a positive relationship between Afghanistan's economic growth and health sector expenditures. Changes in health sector expenditures cause changes in economic growth. Specifically, a 42.5% variation in economic growth can be explained by changes in health sector expenditures. The positive beta coefficient confirms that there is a positive association between health sector expenditures and economic growth in Afghanistan. Hence, an increase in health sector expenditures leads to improvements in economic growth.

Recommendations

1. Increase in Public Health Budget :
   • Relevant authorities should allocate greater budgetary resources to public health, particularly for essential services such as maternal and child health, immunization programs, and communicable disease control.
   • There should be focused attention on improving health infrastructure and equipment to enhance the quality of healthcare services.

2. Expansion of Access to Health Services :
   • Special measures should be taken to ensure that people in rural and remote areas have adequate access to healthcare services.
   • Collaborative efforts with the private sector and international partners should be intensified to establish effective healthcare centers in all regions.

3. Development of Targeted Programs to Improve Life Expectancy and Reduce Mortality Rates**:**
   • Specialized health programs should be implemented to reduce maternal and child mortality, which represents a critical area within the health sector.
   • Comprehensive programs for disease prevention, medical treatment, and improved nutrition should be expanded to increase life expectancy.

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