Empirical Analysis of Relationship between GDP Growth Rate and Expenditure on Both Education and Health in Sri Lanka Using Multivariate Time Series Technique.

Anuradha Gamage

*Department of Economics, Faculty of Humanities and Social Sciences,
University of Ruhuna, Sri Lanka*

Corresponding author: *anuradha@econ.ruh.ac.lk*

ABSTRACT

Gross Domestic Product (GDP) is one of the major keys in measuring countries development. Development does not stand only for financial prosperity. Among number of facts that make impact on GDP and its growth over years, education and health can be considered as important factors. This study has been carried out to analyse how the expenditure on education and health, as a share of national expenditure have been behaving throughout past 59(1962-2020) years on GDP growth in Sri Lanka. Since three data series were not representing stationarity, values were log transformed and tested for stationarity. According to the results *lgdp, ledu* and *lhealth* were unit root non-stationary, therefore first difference of data taken and then all three variables Δ*lgdp*, Δ*ledu* and Δ*lhealth* were stationary. Thus, the requirement for VAR modelling was satisfied. AIC, BIC and HQ criteria have been conducted to find the VAR order as 3. VAR(3) model satisfies the accuracy condition of non-cross correlated residuals. Granger causality could be identified in the direction GDP to both Education and Health expenditure. GDP was not granger caused from both variables. This one-way causality is common for mid and low-income countries. Per capita income arises when GDP grows, then people have money to be spent on education and health while it helps to grow the GDP growth rate. According to model VAR(3) which has short term of 3 lags, GDP growth rate is having positive impact on both education and health in second and third lag. According to the results GDP growth rate cannot by developed only by education, it needs all other economic sector improvements. Making investments in other economics sectors will automatically increase the development in health and education. Health and education are having positive impact on each other. Johansen cointegration test was performed for unit-root non-stationary data according to the results, it could be concluded that there is no cointegrating relationships among variables. That implies there exists no long running or stable equilibrium among three variables. In 2021, 1.29% GDP growth rate could be predicted using VAR(3) model. However, the Covid-19 impact can make changes in the results as the impact was partially touched by the pandemic.

Keywords: *Cross Correlation, Education, Gross Domestic Product, Health, Variance Auto Regressive model*