ABSTRACT

The purpose of this study is to examine the impact of education and technology on economic growth, in general, and also to determine the cross-country differences among the developed and developing nations. The efficiency of the factors of production is a key determinant in enhancing their productivity and hence economic growth. Countries can increase the efficiency and productivity of their labour force by investing in people though increased expenditures on the education sector. Similarly, technological innovation can be treated as an important factor to raise the productivity of physical capital. Thus, rapid growth can occur in countries that are investing heavily in education and research sectors. The study has used education expenditures and R&D expenditures as proxy variables for education and technology, respectively.

The study has applied quantitative research methodologies on panel data consisting of 14 countries and a time period of 17 years for each cross section. The panel unit roots tests are applied for checking stationarity and panel cointegration tests are applied to examine the long-run relationship among the variables. The study has employed Residual-based and Johansen-based cointegration tests. The study suggests the existence of long-run relationship among the variables and the presence of three cointegrating vectors suggesting the interdependency among education, technology and economic growth. The Fully Modified Ordinary Least Squares method is applied to examine the long-run relationship among the variables.

The results reveal that a long run relationship exists among education, technology and economic growth. Education and R&D expenditures generate factor productivity within the economy by enhancing the efficiency of both labour and capital that leads to economic growth through increased output and the income levels. In addition, higher economic growth causes a further increase in education and R&D expenditures (Salter effect). The study also supports the idea of "convergence" or "catch-up effect" among the developing nations; as the positive impact of education and technology on economic growth is much greater in developing countries as compare to the developed ones. This is because of high marginal productivities of capital and skilled labour. R&D and education

nfluence the capacity of developing countries to undergo rapid technological levelopment and hence economic growth. In addition, the empirical findings also upport the fact that China and India are the emerging economies that are expected to atch up the developed nations at a faster pace as compared to other developing nations. The estimated parameters of FMOLS regression for technology in these two countries are much higher as compare to the developed nations as these countries are emphasizing on the knowledge-based economies. On the other hand, technology coefficient for Turkey is insignificant which shows that its domestic effort in R&D does not play a significant role in economic growth and the data reveals that banking, transport and telecommunication gets the major share in its total GDP.