

ABSTRACT

Technology is one of the important factors that can encourage the economic growth of a region. The development of technology, especially information and communication technology (ICT) in the fourth industrial revolution made this era as a phase where there has been a merger between automation technology and cyber technology or can be called by the use of the internet in industrial processes, hence the term internet of things (IoT) was created. The presence of ICT can reduce market failures caused by asymmetric information among economic actors, so the availability of ICT is a very important demand in supporting economic activity in this digitalization era.

The purpose of this study was to analyze the effect of the development of information and communication technology as proxied by the number of broadband internet users, telephones and cellular phones on economic growth in 9 countries that are members of APEC with a high ICT development index (United States, Australia, Brunei Darussalam, Chile, Hong Kong, Japan, Canada, New Zealand and Singapore) in the period 2011 – 2019. This study uses a panel data regression method with a fixed effect model approach. The data used is secondary data that obtained from the World Bank and the United Nations Development Program (UNDP).

The estimation results of the study show that in the span of 9 years (2011 – 2019), information and communication technology, especially the development of broadband internet and telephone, has a significant influence on economic growth in the 9 countries that are members of APEC. Gross fixed capital growth also has a significant effect on economic growth in the 9 observed countries. The use of cellular phones, mean years schooling and the labour force participation rate show no significant effect on economic growth in this study. The development of cellular phones has a non-significant influence when compared to other ICT variables because the penetration rate of cellular phone users in the Asia-Pacific Region still has a low average, but overall in the 2011-2019 period, the endogenous growth theory is still valid, which is characterized by positive influence between technological developments and economic growth in the 9 countries that are members of APEC.

Keywords: endogenous growth, ICT, APEC, panel data