

Chapter 4

Impact of Information and Communication Technology on Economic Growth: Evidence From Arabian Peninsula Region Countries

Mehmet Hilmi Özkaya

Uşak University, Turkey

Abdullatif Almukaddam

Taiz University, Yemen

Maeen Alhuwesh

 <https://orcid.org/0000-0003-1527-2626>

Taiz University, Yemen

ABSTRACT

The present study aims at investigating the impact of information and communication technology (ICT) on economic growth of countries in the Arabian Peninsula region through an econometric study of seven countries over the period 1996-2020. To achieve the objectives of the study, the panel data was based on three independent variables, namely the number of mobile cellular subscriptions per 100 people, number of fixed (landline) telephone subscriptions per 100 people, internet usage (% of population), and the economic growth rate as a dependent variable. The results show that within the framework of static analysis the fixed effects model is the most appropriate and is evidence of the existence of fixed individual differences between the countries of the Arabian Peninsula as regards the impact of ICT on economic growth. It also shows that the mobile phone index has a positive and significant impact, and a negative and significant impact on economic growth is shown to be related to the internet index.

DOI: 10.4018/978-1-6684-6620-9.ch004

INTRODUCTION

Information and communication technology (ICT) facilitate the exchange of information and transforms it into knowledge. This, no doubt, affects the modern societies and leads to a paradigm shift in the levels of economic and social development such as education, health and standards of living (Conole & Dyke, 2004). ICT including the collection, organization, storage, processing, transmission and dissemination of data (audio, video, and text or symbols) is done by using computer tools and telecommunications (Niebel, 2018; WB, 2002). In the last two decades, the world witnessed great and rapid transformations as a result of the expansion in the use of ICT, which directly affected various aspects of human life (Benlahbib, 2018). ICT has provided countries with great potentials to improve the economic situation and reduce disparities between developing and developed countries (Al-Amin & Benlahbib, 2018). The World Bank (WB) takes an optimistic view that ICTs hold great promise for reducing poverty, increasing productivity, promoting economic growth, and increasing accountability and governance (WB, 2012).

Studies done in this field have revealed that ICT is a key factor in the economic and social development of countries owing to its positive effects on economic growth, productivity and employment. A study conducted by the World Economic Forum (WEF) concluded that increasing the digitization of a country by 10% will lead to an increase of 0.75% in per capita GDP, and a decrease in the unemployment rate by 1.02% as digitization provided a boost of \$193 billion to global economic output and created 6 million jobs globally in 2011 (Sabbagh, Friedrich, EL-Darwiche, Singh, & Koster, 2013). However, the countries of the world vary in terms of their use of ICT and the extent to which it is of benefit. This is related to its level of progress and aspiration transformed into an information society having a human objective and centering on development (Usman, Ozturk, Hassan, Zafar, & Ullah, 2021; Khireddine, Nouredine, & Bouzelifa, 2018).

To monitor the progress achieved by countries in transforming into an information society, a composite index of three sub-indicators containing 11 indicators¹ is used with the aim of monitoring and comparing developments in ICT between countries and over time (ITU, 2022). The first sub-indicator focuses on access and includes five indicators of infrastructure and access. The second sub-indicator focuses on usage and includes three indicators of the intensity of ICT use. The third sub-indicator focuses on technology skills and includes three indicators related to the skills needed to benefit from ICT, which is an indirect indicator and gives less weight when calculating the IDI compared to the other two indicators (ITU, 2022 a). In the Information Society Measuring Report 2018, it was indicated that more than half of the world's population is connected to the Internet, and there is a general upward trend in access to ICT, with the exception of fixed telephones. This, of courses, represents an important step towards a more comprehensive global information society. From another angle, the report indicates that the lack of ICT skills is one of the important obstacles to the population's access to the Internet, and this problem is more prominent in the case of developing and least developed countries (ITU, 2018).

Based on estimates made by the International Monetary Fund (IMF) for the year 2022, the countries of the Arabian Peninsula are classified into high-income countries where the average per capita income ranges between 23.4-84.5 thousand dollars, and low-income countries like Yemen, which is grouped under the lowest-income countries in the world and has an average per capita income of \$891. The countries of the Arabian Peninsula also achieved high economic growth rates that ranged between 3.3-8.2%, with the exception of Yemen, which achieved a 1% (IMF, 2022; IMF, 2022a). They are classified among the countries with a high index in the IDI 2017 rank, where the index ranged between 6.43 and 7.60. Yemen, however, was not included in the report (ITU, 2022b).

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/impact-of-information-and-communication-technology-on-economic-growth/316039

Related Content

Toward a More Informed and Informative Use of the Concept Network in ICT4D

Sylvain K. Cibangu (2015). *International Journal of Information Communication Technologies and Human Development* (pp. 1-19).

www.irma-international.org/article/toward-a-more-informed-and-informative-use-of-the-concept-network-in-ict4d/128368

Applications of Artificial Intelligence in Media and Entertainment

Richard Lachman and Michael Joffe (2021). *Analyzing Future Applications of AI, Sensors, and Robotics in Society* (pp. 201-220).

www.irma-international.org/chapter/applications-of-artificial-intelligence-in-media-and-entertainment/262834

Trust and Technology in Inter-Organizational Business Relations

Muneesh Kumar and Mamta Sareen (2009). *International Journal of Information Communication Technologies and Human Development* (pp. 40-57).

www.irma-international.org/article/trust-technology-inter-organizational-business/37543

To Mine or Not to Mine?: Using Game Theory to Explain the Decision-Making Process in Asteroid Mining Investigations

Jesus Pedro Zamora Bonilla and Simone Centuori (2019). *Handbook of Research on Industrial Advancement in Scientific Knowledge* (pp. 224-246).

www.irma-international.org/chapter/to-mine-or-not-to-mine/220159

Academic Mobility Programs as Part of Individual and Professional Development in a Globalized World: Uncovering Cultural Dimensions

Irina Khoutyz (2017). *Handbook of Research on Individualism and Identity in the Globalized Digital Age* (pp. 168-189).

www.irma-international.org/chapter/academic-mobility-programs-as-part-of-individual-and-professional-development-in-a-globalized-world/162951