Does Information and Communication Technology Lead to the Well-Being of Nations? A Country-Level Empirical Investigation

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Abstract

This paper examines the role of information and communication technology (ICT) in enhancing the well-being of nations. Extending research on the role of ICT in the productivity of nations, we posit that the effects of ICT may not be limited to productivity (e.g., GDP), and we argue that the use of ICT can also improve the well-being of a country by helping citizens to develop their social capital and achieve social equality, enabling access to health-related information and health services, providing education to disadvantaged communities, and facilitating commerce. Using a number of empirical specifications, specifically a fixed effects model and an instrumental variable approach, our results show that the level of ICT use (number of fixed telephones, Internet, mobile phones) in a country predict a country’s well-being (despite accounting for GDP and several other control variables that also predict a country’s well-being). Furthermore, by using an exploratory method (bi-clustering) of identifying both country-specific and ICT-specific variables simultaneously, we identify clusters of countries with similar patterns in terms of their use of ICT, and we show that not all countries increase their level of well-being by using ICT in the same manner. Interestingly, we find that less developed countries increase their level of well-being with mobile phones primarily, while more developed countries increase their level of well-being with any ICT system. Contributions and implications for enhancing the well-being of nations with ICT are discussed.

Keywords: Country well-being, ICT investments, ICT policy, ICT use, ICT adoption, effects of ICT