What Accounts for the Differences in Internet Diffusion Rates Around the World?

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INTRODUCTION

The literature is replete with studies that indicate a strong link between the adoption and use of the Internet and economic growth not only for individual citizens but also for national economies. Despite the irrefutable benefits of the Internet, in many countries around the world, the Internet adoption rates remain low. In Africa, according to the 2015 data, 10.7 percent of the households enjoy Internet access at home and about one individual out of five (20.7%) uses the Internet (International Telecommunications Union (ITU), 2016). In contrast, in Europe, these figures are 82.1% and 77.6%, respectively. Figure 1 clearly highlights the gross disparity that exists between the Internet diffusion rates for the Organization for Economic Cooperation and Development (OECD) and Sub Saharan Africa (SSA) countries. Thus, the question of why do these differences exist is worth investigating. And, an understanding of the factors that promote and/or hamper the adoption of the Internet is warranted as the insights gleaned from this can assist policy makers, economic developmental agencies, and the political leaderships in formulating appropriate strategies and policies.

BACKGROUND

The Internet and the associated technologies are vital in boosting the economic wellbeing of nations and their citizens Applications such as e-business, voice over IP (VoIP), mobile commerce, and integrated supply chains have become the primary drivers of the growth of economic activities in many countries (Albirini, 2008; Dedrick, Gurbaxani, & Kraemer, 2003; Kenny, 2003, Koh & Chong, 2002). Further, the Internet is providing revenue-generating and skill-enhancing opportunities to individuals across the globe. For individuals, it avails the opportunities to sell things online, collaborate with others at far-flung places, learn new skills, access data/information quickly, and communicate rapidly (Chavula, 2013; James, 2008; Larson & Murray, 2008; Laguerre, 2013). Adoption and use of the Internet and other technologies have boosted trade and globalization leading to improved GDP (Albirini, 2008; Kuppusamy, M. & Santhapparaj, A.S., 2005; Lawrence, 2002; Raheel, Karim, Saleem & Bharwani, 2012). In fact, the 2015 Global Information Technology Report asserts that digital technologies can boost global economic output and creates new economic opportunities for individuals particularly in countries with very low technology penetration rates. The report also claims that a 10% increase in a country's telecommunications infrastructure boosts the GDP by nearly 2.8 percentage points provided the country first achieved a certain minimum threshold of digitization. The threshold is estimated to be about 24 of the population. The 2013 Global Information Technology Report had claimed that a doubling of mobile data usage increases GDP per capita by ½ a percent point. Accelerated economic growth of

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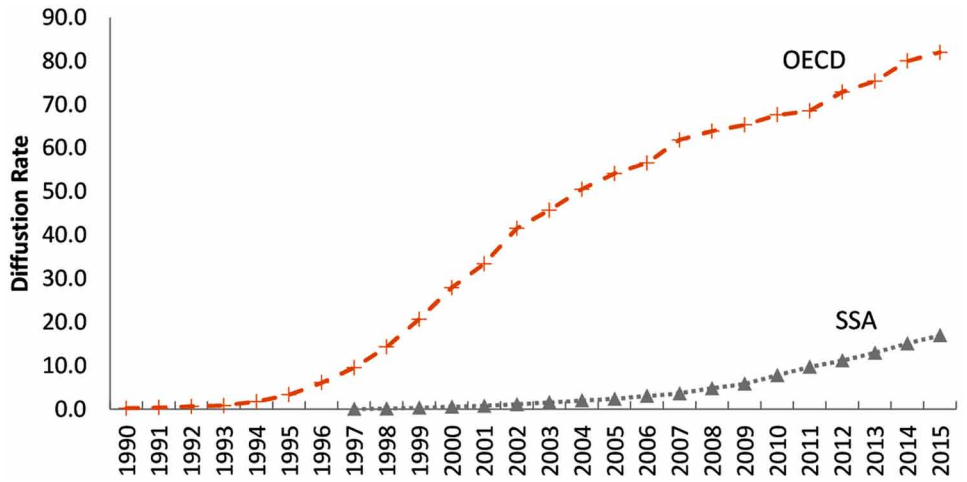
Figure 1. Internet Diffusion rates for OECD and Sub Saharan Africa (SSA) – 1990-2015



India and China in the last decade is also a prime example of how Information and Communication Technologies (ICT) in concert with appropriate economic, intellectual property protection, and infrastructure improvement policies promote rapid economic development (Also see, Global Information Technology Report, 2015).

GLOBAL INTERNET ADOPTION FACTORS

At the national level, there exist many factors that influence the Internet adoption rate. These factors include the availability of reasonably-priced technology/telecommunications infrastructure, access to personal computers, educational and training opportunities for individuals, income levels, innovative capability, culture, competition in the information technology industry, and the availability of local Internet content (Beilock & Dimitrova, 2003; Birba & Diagne, 2012; Chinn & Fairlie, 2007; Choi, Williams & Ha, 2014; Dewan, Ganley & Kraemer, 2010; Dholakia, Dholakia & Kshetri, 2003; Feng, 2015; Galagedarage & Salman, 2015; Huang & Chen, 2010; Kiiski & Pohjola, 2002; McCoy, Cha & Durcikova, 2012; Meijers, 2006; Murthy, 2004; Murthy, Nath & Soleimani, 2015; Nath & Murthy, 2003, 2004; Ojuloge & Awoleye, 2012; Oyelaran-Oyeyinka & Lal, 2005; Soleimani, 2015; Touray, Saminen & Mursu, 2015; Wunnava & Leiter, 2009). Further, the rule of law (e.g., property rights, strong legal system) governing the country's trading system, government regulations and market liberalization policies, and credible payment systems (e.g., credit cards, digital wallet and cash) are necessary for expanding into mobile and digital commerce.

Human Capital Development Factors

It is virtually impossible to fully reap the benefits of the Internet if people are not able to read or write or have a basic understanding of computers, Internet and their applications. Therefore, an individual has to possess a minimum level of computer/technology and language literacy to use the Internet for beneficial purposes. At the national/regional level, one way to assess this is to consider factors such as:

1. Adult literacy rate
2. Percent of school age children enrolled in schools
3. Per capita spending on education

Many studies including those by Baliamoune-Lutz (2003), McCoy, Cha and Durcikova (2012),

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