Chapter 85
The Global Digital Divide and Its Impact on E-Governance

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ABSTRACT

As technology has continued to advance, a disparity in the diffusion, adoption, and utilization of technology has become apparent. This chapter explores the digital divide and the scholarly research investigating the factors which have been found to influence it. The major finding from extant research is that the digital divide is largely explained by variations in national wealth. These same variations also explain differing levels of e-government readiness and e-participation. The chapter concludes with a discussion of policy choices and dilemmas posed by the digital divide.

INTRODUCTION

Over the past 50 years, changes in technology, particularly information and communication technologies (ICT) have been vast. The growth and diffusion of ICTs has not followed a uniform pattern across the globe, however. This disparity is often referred to as the *digital divide*. This chapter examines the evidence for the digital divide and the empirical research that has studied its causes and correlates. The chapter then explores the connections between the digital divide and prospects for e-government and e-governance worldwide, studying the relative capacity for e-government in the nations of the world. Because, the digital divide is deeply rooted in the persistent economic disparities between nations, policy options to narrow the digital divide often face the same set of constraints and criticisms as more general development-related policies. Nevertheless, there are some policy options that lend themselves to easier implementation which could have a substantial effect on narrowing the digital divide.

The chapter proceeds as follows: the first portion of this chapter presents a series of statistics which document the digital divide among nations in terms of their ICT infrastructures, usage and capacity. The second section reviews scholarly

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research on the determinants of the digital divide. The third part of the chapter turns to the domains of e-government and e-governance, defining the concepts and how they relate to the digital divide. The fourth section presents empirical measures of nations' readiness for e-government and e-participation, showing large gaps between low income and high income nations. The chapter concludes with a discussion of policy alternatives and the dilemmas policymakers face in attempting to bridge the digital divide.

MEASURING THE GLOBAL DIGITAL DIVIDE AND ITS DETERMINANTS

Over the years, scholars have documented large disparities in the usage and ownership of ICT, a disparity which has been coined as the *digital divide*. In short, the digital divide is the gap in technological infrastructure, prowess and capacity which separates the digital "haves" from the digital "have nots". Koss writes, "the term digital divide refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels and their opportunities to access information and communication technologies" (p.79). It is clear from Koss's definition that the digital divide may be examined at a number of different scales, comparing individuals, groups and various higher level geographic aggregations of people. For the purposes of this chapter, the focus is the digital divide among nations of the world,.

In studying the global digital divide, it is useful to cluster nations in such a way that the disparities are easily discernable. Because ICT is generally resource intensive, it requires a fairly sophisticated electrical and telecommunications infrastructure and is most intensively used by higher socioeconomic status populations, one would expect to see large differences in ICT usage, ownership and capacity between wealthy and less wealthy nations. To help facilitate such a comparison, the ICT measures in this section are stratified by three levels of national income, low, middle and high; these grouping are based on an income typology devised by the World Bank. The World Bank classifies countries using Gross National Income (GNI) per capita. Using 2009 figures, low income countries have GNI less than or equal to $995, middle income countries lie between $996 and $12,195; high income countries have GNI per capita of $12,196 or greater. The low income group contains 43 nations; examples of countries in this class are Afghanistan, North Korea, Ethiopia and Haiti. The middle income group contains 97 nations; examples of members in this group are Brazil, Egypt, India and Romania. There are 50 countries in the upper income group, which includes countries such as Great Britain, Japan, New Zealand and the United States.

A fairly straightforward measure of the digital divide is the extent of personal computer ownership. Figure 1 compares computer ownership rates for low income, middle income and high income nations from 1999 to 2006.[1] The data show a clear and growing separation in computer ownership between the different groups of countries. In 2006, there were 60.61 computers per 100 population in high income countries, but only 5.05 and 1.71 computers/100 persons in middle and low income countries, respectively. This amounts to a sizeable gap. High income nations had roughly 35 times the rate of computer ownership for low income countries and 12 times that of middle income countries.

Another common measure of the digital divide is internet usage. Figure 2 shows internet usage rates from 1997 through 2008, which shows some interesting trends. First, high income countries have the greatest rate of internet use, with 69.07 users/100 persons as of 2008. Yet it is also apparent that the usage rate in high income countries, though increasing, is doing so at a diminishing rate; after 2002, the rate of increase begins to diminish for high income nations. This pattern fits the well-know S-curve pattern of technological diffusion, where early adopters of technol-