Chapter 10
Toward Understanding U.S. Rural–Urban Differences in Broadband Internet Adoption and Use

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ABSTRACT
The Internet has become entrenched in the U.S. economy over the last 15 years; access and use of the Internet has increased for all regions of the United States, most types of households and work places, and all income groups. In this chapter we explore how access technologies may affect household on-line activity patterns and address some of the aspects that differentiate urban and rural household Internet use. Rural households are less likely than urban households in having broadband Internet access but this varies regionally across the country. Study suggests that broadband Internet access is no longer perceived a luxury, but as a necessity and that there is pent-up demand for broadband Internet access in rural areas.

INTRODUCTION
Analysis suggests that rural economies generally benefit from broadband Internet availability. In comparing American counties that had broadband access relatively early (by 2000) with similarly situated counties that had little or no broadband access as of 2000, employment growth was higher and nonfarm private earnings greater in counties with a longer history of broadband availability (Stenberg, 2008).

Government policies that encourage deployment of broadband Internet access services have broadened broadband availability in rural America. The 2008 Farm Act (Food, Conservation, and Energy Act of 2008) reauthorized U.S. Department of Agriculture (USDA)’s telemedicine, distance learning, and rural broadband access grant and loan programs. The American Recovery and Rein-
vestment Act of 2009 provided $2.5 billion to the USDA for loans and grants to increase broadband provision in rural areas. As much as these funds address the needs of unserved and underserved communities, rural broadband availability will increase.

In this chapter we tackle some aspects that differentiate urban and rural household use of the Internet, such as the question of what online behavior becomes more likely as improved access technology becomes available? And, are the differences in rural and urban household use significant?

BACKGROUND

Broadband Internet access has become viewed by many as necessary to fully utilize the potential from the Internet (Greenstein and Prince, 2006; Leamer and Storper; Parker, 2001). As the Internet economy has evolved, more and more applications have required higher data transmission rates for their use, even in the case of simple shopping web-sites.

Studies by the National Telecommunications and Information Administration and Economic and Statistics Administration (NTIA) that first appeared in 1994, have described the changing user demographics of Internet use. More recent studies describe the current, and more static, situation or examine the adoption of newer, broadband, technologies. Household studies by Choudrie and Dwivedi (2005, 2006); Stanton (2004); Stenberg and Morehart (2008); and the U.S. General Accounting Office (2001) tested socio-economic factors distinguishing adopters and non-adopters of broadband Internet use. Choudrie and Dwivedi (2005) found age, gender, and social grade were important when distinguishing between adopters and non-adopters. Their 2006 study found that characteristics such as income and education were just as important. Stanton (2004) tested for a digital divide and found it the widest for computer ownership and the narrowest for broadband Internet connections. Most studies on Internet adoption have focused on the household. Studies by the NTIA in the 1990s, for example, described differences across many demographic and geographic groupings, not only for households, but also for Internet activity in the workplace.

Rural communities have not been left out of the evolving digital economy, though from the onset there has been an issue of equal access to the Internet (Parker and Hudson, 1992; Oden and Strover, 2002). Rural households have become almost as likely as urban households to use the Internet (Stenberg, 2006). Broadband Internet access in rural areas, however, has been less prevalent than in much more densely populated areas of the country. Broadband Internet access has become the crux of today’s policy debate on equal access between urban and rural communities (Malecki; Stenberg et al, 2009).

ON-LINE CONSUMER ACTIVITIES

The household, or consumption, sector is a major, perhaps the greatest, demand-side driver in the development of the Internet economy. There are two major data sources directly addressing individual household on-line activity: the Bureau of the Census and PEW (PEW Internet & American Life Project). Unfortunately, the Bureau of Census has not collected data on household on-line activity since 2003 (outside the limited “are households on-line” questions more recently) so we must rely on the small sample PEW surveys for any understanding of individual household’s on-line behavior instead of the aggregate e-retail, peer-to-peer, web-page access counts, and other useful information that are commonly reported.

PEW survey samples, because of their small sample size do not allow much analysis between urban and rural household in their on-line behavior. What can be ascertained from the data suggests that on-line behavior is alike if one controls for