

# A new benchmark for Internet use: A logistic modeling of factors influencing Internet use in Canada, 2005<sup>☆</sup>

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## Abstract

Internet diffusion is not homogeneous and depends on many factors. This study uses data from the Canadian Internet Use Survey (CIUS) to explore the extent demographic variables affect Internet use by individuals in Canada. A logistic model confirms that certain factors, educational attainment, and geography in particular influence Internet use in Canada, controlling for age and income. Education maintains a strong, significant impact on Internet use such that the odds of using the Internet are about three times greater for someone who has some post-secondary education than someone who has, at most, a high school education. An urban–rural digital divide persists in Canada with the odds of using the Internet being almost one-and-a-half times greater for someone who lives in an urban area. While language also has a large effect on Internet use, the presence of children in households no longer seems to be a significant factor. This study thus underscores the changing digital environment in Canada and the need for adaptive, flexible policies addressing national connectivity issues and, in particular, broadband Internet availability.

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**Keywords:** Internet; Broadband; Rural; Urban; Digital divide; Logistic modelling; Canadian Internet Use Survey; Information economy; Information and communication technologies

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## 1. Introduction

A community's ability and willingness to respond to technological innovation, be it exogenous or endogenous, will help to partly determine its success in the global information economy. For many years, there has been a public policy interest in Canada to promote the use of innovative technologies, especially in rural and remote areas. This included access to advanced telecommunication services in areas either not immediately served or not likely to be served by market forces because of economic unfeasibility.

The sustained investments in Information and Communication Technologies (ICTs) have resulted in the common use of the Internet in Canada.<sup>1</sup> ICTs can be improved and can compliment both existing technologies and potential new ones. However, the studies reviewed in this paper have shown that determinants of Internet use such as income, age, education, geographic location, and so forth have limited its uptake and effective utilization by some Canadians. In reference to broadband, the Canadian Radio-television and Telecommunications Commission (CRTC, 2006) reported that in 2005, virtually all Canadian households in urban centers had access to broadband services, versus 74 percent for rural centers. Thus, Internet ubiquity appears apparent only to the well connected.

Internet infrastructure, like the electrical grid, induces major changes economically, socially, and politically. Therefore, the longer communities and individuals in Canada stall in their accessibility, adoption, and effective use of the Internet, the less competitive they may become relative to individuals in countries with more aggressive adoption and use rates.

In this paper, we briefly review the Canadian government's policy on Internet adoption and the historical divide of its use among urbanites and rural residents. We follow with a discussion of a new Statistics Canada survey for gathering data on the use of the Internet by individuals. A logit model regression, which examines the determinants of Internet use by individuals in Canada, is then presented. The paper will conclude with a discussion of research and policy considerations reflecting the results of the logit model, with particular reference to rural access.

## 2. Historical perspective: Canadian policy towards Internet adoption and diffusion

Federal, provincial, and territorial governments have adopted successive policies and initiatives in support of extending access to ICT infrastructure and services in all communities. Consistently, connectivity for rural and remote communities has been a priority, partly resulting from broader objectives to achieve equity between rural and urban regions.

The rise of large, regionally based telecommunication service providers in Canada in the early 20th century spawned policies supporting the notion of "natural monopolies" required to achieve economies of scale capable of subsidizing integrated services to rural (less profitable) regions (Winseck, 1997). This idea of striving for universally available telecommunication services was enshrined in the 1993 Telecommunications Act as part of a public policy vision.

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<sup>1</sup> It is estimated that 68 percent of adult Canadians used the Internet from any location during 2005 for personal non-business reasons (Statistics Canada, 2006).

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