

## Chapter 101

# Cyber–Behaviors and Development Impacts in Latin America

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### ABSTRACT

*While the current scientific literature is quite scarce for most of the developing world, several leading researchers have made great strides in understanding the role of cyber technologies and related information and communication technologies (ICT) in economic development. A good proportion of this work lays on interventions in the regions of South Asia and Africa. However, cyber-behavior research focused on Latin America has been very limited. Very recently, a group of researchers took a bold step to apply rigorous statistical tools in a systematic way to evaluate how these technologies contributed to the success of several development projects in the region of Latin America. This chapter draws on several of the background papers of the book “Development Connections: Unveiling the Impact of Information Technologies,” edited by Alberto Chong, as well as some of the book’s chapters. It summarizes a number of specific cyber-interventions in the areas of finance, education and poverty-reduction that took place in Latin America and that may lead to a better understanding of the impact of interventions to know what works, what does not, and why.*

## INTRODUCTION

Cyber-instruments have become indispensable for societies to function. Computers, the Internet, mobile telephones and other information and communication technologies are becoming widespread all over the world, changing the way people interact, consume, produce and learn. Personal computer, Internet, fixed, and mobile broadband penetration are all trending upward in Latin America, although the overall penetration still levels remains low (ITU 2009, 2009a). The common thread of all the existing cyber-behavior research in Latin America is that tools that take advantage of new information and communication technologies are not the panacea that policymakers want them to be. Such tools cannot do it all, but need to be complemented with other tools so that full development impact can be reached.

ICT have brought truly new and innovative possibilities to developing countries and Latin America has not been the exception. Here are just a few far-flung examples. In Honduras, farmers receive market price information via SMS (Pineda Burgos, Agüero Rodríguez & Espinoza, 2010), in Colombia, coffee workers in rural areas can receive and make electronic payments (Chong, Galindo & Pinzón, 2011); in Bolivia and Peru, individuals receive text messages to remind them to save (Karlán, McConnell, Mullainathan & Zinman, 2010); in Chile, financial literacy campaigns can be delivered with the help of information technology (Hastings, Mitchell, & Chyn, 2010); public primary schools in Uruguay provide laptops to all students (Berlinski, Busso, Cristiá & Severín, 2011).

Policymakers and academics agree that cyber-instruments can be beneficial for economic and social development, yet virtually no systematic or solid assessment exist on the mechanism and impact of ICT on the welfare of people. The lack of adequate data to better understand basic problems in development economics has been a recurring problem for decades. A number of

the interventions summarized in this chapter avoid this problem by relying on a set of field experiments—actual projects that were tested in the field—in several countries in Latin America and the Caribbean. They rely on randomized experiments, or randomized controlled trials (RCTs) which are increasingly used in formal empirical research in development economics. In a RCT, individuals or communities are randomly assigned to different “treatments” – different programs or different versions of the same program. Since the individuals assigned to treatments are exactly comparable (because they were chosen at random), any difference between them is the effect of the treatment (Banerjee & Duflo, 2011).

One of the reasons RCTs are becoming a widespread method of testing is that they help identify the specific variable that may have caused the particular result under investigation. RCTs help to disentangle a particular outcome from the various factors that may have caused it. Thus, the method can have many uses in policy-relevant applications. For example, in education, it can be focused to better understand “one laptop per child” programs, and in particular, the impact on rural areas and the poor. In finance—an area in which randomized controlled trials have been more broadly applied—efforts to use text messages to remind people to save can be tested, for instance.

With adequate policies in place, governments can take great advantage of cyber-instruments for development. But it’s important to keep in mind that greater access to these tools won’t bring about development on its own. Countries must also focus on how these tools are used. The trials presented in this chapter show that in order for cyber instruments to contribute to development it is necessary to take into account equally crucial elements, such as human capital, the institutional context, and the policy goals of governments. In many cases, adopting the latest technology will not necessarily generate the best development outcome if, for example, the population lacks the basic literacy skills to use such technology

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