Where's 'ICT for Latin America'? Addressing this Research Gap in ICT4D Literature

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Abstract

Latin America is largely absent from the current English-language information and communication technologies for development (ICT4D) literature. However, the area poses the literature's best promise for addressing its biggest shortfall: a dearth of theory. Studies based in Latin America can address this shortfall in theory by adopting the lens of political economy, which brings the region's political, social, and cultural factors into sharp relief. These political, social, and cultural factors are exactly what ICT4D studies must examine if they are to build predictive theory of project success. We document the absence of Latin American studies in the ICT4D literature, pose possible explanations for this absence, detail why Latin America holds promise for addressing the literature's theoretical problems, and outline tasks for future research to reap this promise.

Author Keywords

ICT4D; Latin America; Literature Review.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Latin America is largely absent from the English-language ICT4D literature. Yet, the political economy of modern Latin America, combined with its long history of development theories that stand in contrast to traditional modernization theories, render it the ideal locale to tease apart the diverse political, social, and cultural factors that shape interactions among people and their use of ICTs [**Error! Reference source not found.**]. That is to say, the region's defiance of neoliberal economic policies over the past decade and a half bring its political, social, and cultural factors into sharp relief, and these political, social, and cultural factors are exactly what ICT4D studies must examine if they are to build predictive theory of project success.

In this paper, we document the absence of Latin American studies in the ICT4D literature, pose possible explanations for this absence, detail why Latin America holds promise for addressing the literature's theoretical problems, and outline tasks for future research to reap this promise. In short, we argue that studying and theorizing about projects in regions such as Latin America that embrace alternative value systems might open ICT4D scholars to development goals and people's desires beyond a strict focus on technology adoption as the end goal. The emergent Latin American notions of *buen vivir* and *suma qamaña* (good living and living well together, respectively and literally) offer alternatives to judging societies via their scientific and technological accomplishments or their accumulation of wealth [2,3].

Latin America's Absence in the English-Language ICT4D Literature

As reflected in at least two key metrics, Latin America is understudied in the English-language ICT4D literature. The first metric is the number of published articles that feature Latin American cases in the top ICT4D journals. The top three ICT4D journals, according to Heeks [4], are *Information Technologies & International Development* (ITID), *Information Technology for Development* (ITD), and *Electronic Journal of Information Systems in Developing Countries* (EJISDC). Across the entire run of these three journals (more than 850 research articles, dating back to 1986 to the first issue of Information Technology for Development), only 70 research articles present empirical data for studies conducted in Latin America, compared to more than 250 for Africa and 300 for Asia.

The second metric is the number of region-specific journals on ICT4D topics. No English-language journal has a specific focus on Latin America. Heeks' ranking of ICT4D journals [4] notes, in contrast, at least five journals that address African research (*African Journal of information and Communication, African Journal of Information & Communication Technology, South African Journal of Information Management, African Journal of Information Systems, and International Journal of ICT Research and Development in Africa*) and three journals that address Asian research (*Asian Journal of Communication, Asian Journal of Information Technology, and Asian Journal of Information Management*). A single Spanish-language journal specifically about ICT4D, *Cuadernos Internacionales de Tecnología para el Desarrollo Humano*, published by Ingeniería Sin Fronteras of Spain (Engineers Without Borders) from 2004 to 2009, is no longer in publication.

The most significant concentrations of work about Latin America have arisen in special issues for Latin American research. Each of the three top journals, ITID, ITD, and EJISDC, has published a special issue on Latin American research.

Dell and Kumar [5] have also raised the concern about Latin America receiving less attention in ICT4D. Bar and Toyama [6] pointed out that a language barrier may prevent Spanish and Portuguese-speaking Latin American scholars from participating in the global ICT4D scholarly community. One assumption that follows from Bar and Toyama's concern is that researchers in Latin America, particularly Spanish speakers, are the primary contributors of studies in Latin America.

Why is Latin America Overlooked?

To explain the relative absence of Latin American studies in English-language ICT4D research, we might first look to factors endogenous to the region, particularly those rooted in political economy. In recent years, a number of Latin American countries have come to reject the United States' vision of hemispheric cooperation, a vision built on a neoliberal economic system that favors free trade, privatization, and reduced spending on social programs. Instead, these countries favor systems in which Latin American governments join together to play a central role in their own development without significant input from governments outside the region, with the aim of spending on social programs that were neglected under years of neoliberal policies [7,8]. Philosophies such as neoBolivarianism (which builds on Simón Bolívar's early vision of a politically unified Latin America) and latinoamericanismo (which calls for uniting Latin

American and Caribbean countries that are committed to social progress and that have shared histories of colonialism, neocolonialism, and imperialism) are reflected in the post-neoliberal sentiments of New Left governments that have come to power in Latin America since the millennium [9,10].

Beyond these endogenous factors, at least two exogenous factors also may have served to make the region less attractive for ICT4D studies. First, there is the obvious problem of language. Of the five most common research destinations in the literature in the past five years (India, South Africa, Malaysia, Nigeria, and Tanzania), all recognize English as an official language, a condition that eases the research process for many foreign scholars. Scholars who cannot speak Spanish or Portuguese are unlikely to undertake ICT4D research, which remains highly fieldwork-based, in Latin America.

The second exogenous factor concerns markets and the role of technology companies in funding or otherwise supporting ICT4D research. Latin America is not nearly the market for technology goods that India is. In terms of sheer numbers, India, whose population topped one billion in 1998, far outstrips Latin America, whose most populous country, Brazil, has a population of only 182 million. Although Spanish is the language of most Latin American countries, Portuguese is the language of this region's most populous country. Attraction to emerging markets may help explain why ICT4D studies in this region fall far behind prominent countries in the literature.

Over the past decade and a half technology companies may have found Latin America less appealing (for

reasons of market size, consumer spending, and market segmentation) than India as a market for ICT goods, and hence may have been less eager to support ICT4D projects (and subsequently spawn ICT4D research) in the region. Market considerations may explain, for example, why Microsoft has a major research center in India, but not in Latin America. Microsoft Research's Technology for Emerging Markets group in Bangalore, India, is one of the few research groups in a major multinational technology corporation that resides in the developing world. Thus far, we have established that ICT4D scholars have conducted little Latin America research and we have given potential explanations for why this region is largely absent in the literature. What remains to show is why conducting ICT4D research in Latin America is worthwhile.

Latin America's Promise as a Base for Theory Development

ICT4D scholars have for some time bemoaned the absence of theory, particularly development theory, in this highly empirical literature, which is awash in descriptive case studies but low in models, frameworks, and theories for explaining and predicting relationships between ICTs and development processes [11,12,13]. To do better, scholars can begin by situating ICT4D endeavors within path-dependent historical processes and socially constructed frameworks. Toyama's [14] claim that ICTs amplify the conditions of situations in which they are introduced is a good first step in that it acknowledges situational factors. Scholars might extend Toyama's work by exploring the dynamics and structures surrounding ICT4D endeavors to understand the interaction among diverse political, social, and cultural factors in the context of people and ICTs. Because Latin America's rejection of neoliberal economic policies and its political bent towards self-reliance bring its political, social, and cultural factors into sharp relief, this region is a good setting for the work of teasing out the role that these factors might play in ICT4D project success as scholars attempt to build predictive theory.

Addressing the Gap and the Next Step

Although ICT4D research in Latin America is underrepresented in the main venues of the field, that does not necessarily indicate that it is not taking place in countries in the area. Such research is usually overlooked since the term ICT4D (or ICTD) is not something that scholars in Latin America would use to describe their own work – particularly the "development" part; this labeling excludes local research from the ICT4D literature.

ICT4D is often defined as ICT for International Development, which has defined the rhetoric in the field- meaning that developers come from developed countries and development happens outside these countries. For example, one of the main journals in the field is called *Information Technologies & International Development* (ITID). While there may be plenty of work that would interest ICT4D scholars, it is not easily identifiable as part of this literature. This is exacerbated by publishing models in Latin America that favor publishing in journals linked to institutions (e.g., FLACSO) or roughly thematic journals rather than the very granular journals common in English-language academic publishing.

In order to address this gap and have e better understanding of ICT4D research in Latin America, we have administered a 15-question survey on several

ICT4D, Science and Technology Studies (STS), Computing, Community Informatics, and Information Systems mailing lists and Facebook groups. The survey was made available in English, Portuguese and Spanish. Its main goal was to identify the profile of the researchers, their institutions, the conferences they go to, publishing venues, field of research, the terms, methods, and theory used in their research. In the following we describe some of the preliminary results that we received from the survey.

We had 35 respondents, whose majority considered themselves as ICT4D scholars (n=30). They were located in 16 different countries, which 9 were in the USA, 5 in Colombia, 4 in Brazil, 3 in Canada and Mexico. They were mostly in academia (n=27), followed by non-profit organizations (n=5), private sector (n=2), and public sector (n=1).

The respondents mentioned 80 different terms to describe their research. We performed a thematic analysis in order to group them in concise themes. Interestingly, the term "ICT4D" was only mentioned 2- the lowest number. Altogether, the "4D" terms (ICT4D, HCI4D, M4D, Communication 4D, and Knowledge Management 4D) were mentioned 7 times. Terms in the "Digital Divide" theme (Digital Divide, Digital Inclusion, Digital Inequality, Access) were mentioned 14 times, the highest number. Terms in the "Civic and Community" theme (Social Change, Community Informatics, Community Development, Community Technology, Democracy, and Civic Media) were mentioned 10 times, and "Education" terms (Education, Learning, and Training) were cited 7 times.

Respondents who performed empirical research outside the country they were in had Brazil and Mexico as the most researched countries (n=7), followed by Colombia (n=5), Peru (n=4), Cuba (n=3), Argentina, Chile, and Ecuador (n=2), and Bolivia, Costa Rica, Honduras, Uruguay, and Venezuela (n=1).

Respondents published their work in 90 different venues; ranging from conference proceedings, journals (scientific magazines), book chapters, to technical reports. The venues with most publications were *Information Technology for Development (ITD)* and the *Journal of Community Informatics (JoCI)* with 5 articles each, followed by *HCI International*, *ICTD Conference*, and *Information Technologies & International Development (ITID)* with 4 articles each, and *CIRN Prato Community Informatics Conference*, *Communities and Technologies (C&T) conference*, *Conf-IRM (International Conference on Information Resources Management)*, *IFIP 9.4 Social Implications of Computers in Developing Countries*, and *CSCW* with 3 articles each.

These preliminary results, and other responses that still need to be analyzed (e.g. theories and methods used), will guide and help us develop the next step of this research, which is a literature survey and analysis of ICT4D research in Latin America.

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