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Comparing Places on Types of Internet Use

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ABSTRACT

The analysis in this paper compares types of Internet use as reported in two places, North Carolina, U.S., North America, and Tolima, Colombia, South America. The Internet has changed the world and some basic functions of social life have become intricately linked to having access to and the ability to use the Internet. Yet, access to this important resource is not universal. Both of the places examined in this study have documented disparities in Internet access that produces a digital divide. With globalization, it is increasingly important to understand the advantages, and by default the disadvantages, that accompany the proliferation of the Internet. Using survey data collected from a random sample of citizens in each place, we compare types of Internet use and activities. Given the known differences of the digital divide, we select those with Internet access and focus on their types of use to understand the ways this resource is used by those who have it. This study contributes to the broader literature by focusing on Internet activities that transcend place and describes the most common ways people engage with the Internet.

Keywords: Internet access, Internet use, Internet activities, Digital divide

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INTRODUCTION

The Internet provides the opportunity for minute-by-minute exchanges at the macro-level of global communications while also facilitating contact at the micro-level of personal networks. Within recent time, using the Internet has become an essential part of many people's daily life activities. The analysis in this paper compares types of Internet use and activities as reported in two different places located on two different continents: North Carolina, USA, North America, and Tolima, Colombia, South America. For ease of reading, we use the abbreviations NC and Tolima in this paper. Using survey data collected in each location from a random sample of citizens with Internet access, we compare types of Internet use and activities. The function of the Internet is global and this study contributes to the broader literature by focusing on the most common ways people use the Internet in two places in the western hemisphere.

The Internet has changed the world and some basic functions of social life have become intricately linked to having access to it and the skills, or digital literacy to use it. In this study, we recognize that access to the Internet is not universal in NC or in Tolima. This reality frames our work in the social conflict perspective to facilitate understanding the advantages and by default, the disadvantages that accompany the proliferation of the Internet. For many, the Internet is like a basic resource similar to the need for electricity and clean water. However, in NC and Tolima a digital divide persists. The divide is the gap between those who are connected to the Internet and able to participate actively in the digital age versus those who are not connected and thereby "falling through the net" (NTIA 2000). The lack of access to the Internet and low levels of digital literacy contribute to social inequality. The digital divide, like other issues of social inequality, is analyzed by examining differences by group characteristics (i.e., gender, race/ethnicity, age, and residence). Similar to other goods and services used in a household (i.e., water, electricity) having Internet access at home requires investment and commitment on the part of the service provider, community, and consumer. Given the known differences of the digital divide, this research study selects those with Internet access and focuses on their types of use to understand the ways this resource is used by those who have it.

BACKGROUND

Digital Divide in U.S.

In the early 1990's the National Telecommunications and Information Administration (NTIA) located within the Department of Commerce of the Federal Government of the U.S. focused on expanding broadband Internet access and promoting user adoption with the objective of ensuring continued innovation and economic growth (NTIA 1993). The government officials set goals for Internet expansion to ensure America's competitiveness in the 21st century global economy and to address many of the nation's most pressing needs, such as improving education, health care, and public safety (NTIA 2018). Across the years the reports produced by NITA document growth in the number of households with Internet access (e.g., NTIA 1995, 2000, 2011a). In 2011, President Obama reaffirmed the government's commitment at the federal level to "connecting every part of America to the digital age" (NTIA 2011a: 2). At that time, about 71 percent of households had home Internet access (NTIA 2011b: 5) indicating a digital divide. Across these years, a growing body of literature examined various factors contributing to the digital divide. It has been examined in academic research articles (see e.g., Bimber 2000; Boase 2010; Cotton and Shameeka 2006; Martin and Robinson 2007; Mossberger, Kaplan and Gilbert 2008; Powers et al. 2013; Rosenfield and Thomas 2012; Whitacre 2010; Wilson, Wallin and Reiser 2003), government reports and public policy documents (e.g., Vision 2030 2000; Rural Prosperity Taskforce 2000) and studies by non-partisan non-advocacy research centers (e.g., Pew

Research Center 2018). Within this broader social context, the Citizen Survey project launched in NC.

Digital Divide Colombia

In Colombia, South America the Tolima Vive Digital Project emerged within the framework of the Vive Digital Initiative, which was one of the main commitments of the National Development Plan during the first term of President Santos (2010-2014). From the point of view of the socioeconomic context, it can be said that unlike other Latin American and developed countries that suffered the effects of the financial crisis of 2008, the impact of this crisis was not as strong in the case of Colombia. On the contrary, the country managed to consolidate its image as one of the most prosperous emerging countries internationally, attractive for investment and for tourism (Departamento Nacional de Planeación, 2010). At the same time, Colombia began a process to enter into the Organization for Economic Cooperation and Development (OECD). Government efforts focused on the reduction of levels of poverty, inequality and unemployment, and strengthening safety measures nationwide, which all crystallized with the beginning of the peace talks with the FARC guerrillas. In this context, the expansion of Internet access was seen as an important strategy to improve the local economies, facilitate access to education, and improve communication between government and citizens.

Summary of Similarities in Surveys

There are common features of the two different data collection efforts that laid the foundation for the present study. Both the NC and Tolima surveys were government funded research projects that collected data from the citizens using surveys. These data were collected within a comparable time period (Citizen Survey 2011 and Tolima Survey 2014). The content of both surveys focused on access to the Internet and aspects of digital literacy. The end goal of both the NC and Tolima research projects was to provide data to officials to use in creating public policy focused on expanding Internet access to all citizens and increasing digital literacy.

Comparison of Places

In this section, we describe the similarities and differences of each place using demographic characteristics as shown in Table 1. The population sizes are different (NC 9,535,483 and Tolima 1,387,641); however, the places have similarities. One expected similarity is that the percent of women and men in the population is nearly the same. Regarding the distribution of their populations by age, we see a higher percentage of people younger than 18 years in Tolima and higher percentages of people 35 years and older in NC. The most similar age group in size is for people 18-34 years old (23% NC and 26% Tolima). Age is an important characteristic to include in analyses of the digital divide and in producing strategies for its reduction.

Table 1 shows Mestizo as the largest racial group in Tolima (95%). In NC the largest group is White/Caucasian (68%) followed by African American/Black (21%). These differences highlight a historical difference of populating these places and that examination is beyond the scope of the present study. Percent of the population living in rural versus urban areas is nearly identical. This characteristic is important in the analysis of the digital divide because generally people in rural areas have less access to the Internet. Given the focus of our study this similarity facilitates our examination of types of Internet use and online activities.

The distribution by educational attainment (Table 1) shows a larger percent of Tolima residents with less than a high school degree compared to NC residents (59% and 18% respectively). The two places show nearly identical percentages of citizens with high school level education. This variable is key in the analyses of the digital divide because basic Internet skills are typically acquired in educational settings. Regarding graduation from college, Tolima shows nine percent in comparison to fifty-one percent in NC. We note

that the rate in NC is higher than that found nationally due to a large system of public higher education. The unemployment rates are similar but the poverty rate differs dramatically by place. Table 1 shows that almost one-half (45%) of residents in Tolima live in poverty compared to about one-fifth in NC (18%). Taken together, this information forms the social context of the present study.

Table 1. Demographic Characteristics of Population by Place. 2010. Shown by Percent.

	North Carolina U.S. North America	Tolima Colombia South America
SEX		
Women	51	50
Men	49	50
AGE in Years		
Less than 18	24	35
18-34	23	26
35-49	21	18
50-64	19	13
Over 65	13	8
RACE/ETHNICITY		
African American/Black	21	1
Native American	1	4
White/Caucasian	68	0
Mestizo	0	95
Asian America	2	0
Other not specified	8	0
LOCATION		
Urban population	66	67
Rural population	34	33
EDUCATIONAL ATTAINMENT		
Less than High School	18	59
High School Graduate	31	32
College Degree (2 years or more)	51	9
UNEMPLOYMENT RATE	10	15
POVERTY RATE	18	45

SOURCE: US Census Bureau, Departamento Administrativo Nacional de Estadística, Colombia

METHODS

Background of the Citizen Survey, NC

In the state of North Carolina, government officials recognized the need for universal Internet access to spread the benefits of economic development and increase citizen access to state government (Vision 2030 2000; Rural Prosperity Taskforce 2000). In 1999, the NC Board of Science and Technology asked researchers at the ECU Community Research Lab to develop and administer a telephone survey to assess public perceptions of the importance of science and technology in the NC economy. In 2001, the NC Rural Internet Access Authority sponsored a follow-up to the 1999 survey. Confidence in this survey approach lead to continued use of the Citizen Survey as a planning tool in North Carolina's Broadband

Data Development and Planning Project funded through the American Recovery and Reinvestment Act's Broadband Technology Opportunities Program administered by the NTIA. Additional follow-up surveys were completed in 2002, 2004, 2010, and 2011 producing a detailed chronological record that documents changes in citizens' awareness, attitudes, and adoption of the Internet. These six different studies collected data from users of dial-up, broadband, and those with no access to the Internet. Results of these surveys have informed development of policy and programmatic efforts of the e-NC Authority geared toward the goal of ensuring all NC citizens Internet access and the ability to use this critical infrastructure. In this paper, we use data produced from the sixth survey completed in 2011.

Background of the Tolima Survey, Colombia

The Vive Digital (VD) program was the technology plan created for the four-year period of 2010-2014 by the Colombian Government, with the purpose of giving the country a technological leap, through the mass distribution of the Internet and the development of the national digital ecosystem. Internet penetration rates reported by the Ministry of Information Technologies and Communications of Colombia (MINTIC) showed 2.50 percent use of mobile Internet and 5.50 percent use of fixed Internet (MINTIC 2011:14). Tolima was one of the 25 departments in Colombia chosen to participate in the VD program because their Internet coverage was only 2.95 percent in 2010 (MINTIC, 2011). The VD program was developed in Tolima between June 2013 and July 2014 and had four different components. In 2014, the University of Ibague made an evaluation of the impact of each of its four components. In this paper, we use data from the component "Digital Literacy-Training" implemented to provide basic Internet skills to citizens in Tolima.

Methodology and Sample for the Citizen Survey

The Citizen Survey data were collected using telephone interviews conducted in CRL over the course of two months in 2011. The sample of telephone numbers was purchased from Survey Sampling, Inc. and was a stratified sample of the NC population by county. During data collection, quotas were used to ensure adequate representation of rural counties. Of those interviewed, 971 respondents reporting having Internet access and their responses are used in this paper. Among those interviewed, over half of the respondents (60%) lived in rural areas, over half were women (60%), and the modal category of age was 55 years. By education, seven percent of the respondents reported less than high school, thirty-two percent had high school degrees and 59 percent had two years of college or more. As noted earlier, rates of college are higher in NC than in the U.S.. Over half of the respondents were employed (58%) and about one-quarter were retired (28%). The distribution for those reporting on their race shows over three-fourths were White/Caucasian (77%) and the next largest group was Black/African American (14%). This shows that the sample is generally representative of the NC population.

Methodology and Sample for the Tolima Survey

The Tolima Survey data for the VD Digital Literacy component were collected from 463 respondents selected from the 47 municipalities of Tolima in 2014 over the course of two months. Online surveys were completed by 270 respondents and 193 respondents received a face-to-face survey. Among those interviewed, almost all of the respondents (95%) lived in rural areas and over two-thirds were women (67%). The researchers grouped the respondents into three categories by age. The "digital migrants" ages 26 to 50 years old were the largest group (62%), next, the "digital natives" those under 25 years old were about one-quarter of the respondents (27%), and "digital laggards" those over 50 years old were the smallest group (11%). By education level, six percent reported less than high school, about one quarter were high

school graduates (27%) and over two-thirds had two years of college or more (67%). Of the respondents, most were employed (89%). This shows that the sample differs somewhat from the distribution of characteristics in the Tolima population.

RESULTS and DISCUSSION

Table 2 shows the frequencies of types of Internet use for NC and Tolima. The variable labels for each type of use are taken from the survey questions and matched according to content. The types of use are categorized with headings of "Communication with Others" "Consumerism" and "Employment/Economic Pursuits." Under the first heading, we see that for both NC and Tolima, communicating with others using email was reported by almost all respondents (i.e., 95 % and 92% respectively). This finding shows the similarity by place in people's need and or desire to connect with other people. Language is an important means of conveying culture and this finding suggests that using email contributes markedly to the social construction of reality for those with Internet access in these places. Reports of using social media to connect with other people was common (NC 63% and Tolima 89%). Together these findings show that the respondents were typically using the Internet as a tool to communicate with others. This indicates an important advantage of having access because the Internet provides uniquely accessible ways of interacting that are not available without access.

The next category, "Consumerism" shows both differences and similarities. The largest difference is for online shopping with eighty-one percent of NC respondents doing this activity in contrast to fifty-six percent of Tolima respondents. This difference may be indicative of a NC having a higher level of commercialism targeting online users, or perhaps the services offered by companies is different in each place, or perhaps home delivery is easier in NC than in Tolima. Further study of this difference requires information about NC and Tolima shopping and delivery services. A similarity is shown in the use of the Internet to get health care information with over three-fourths of respondents in each place reporting this activity. This suggests a level of comfort in using the Internet to obtain important information about personal health and health care services. Considering the difficulties that likely exist in gaining access to healthcare in rural areas these reports indicate that having this information available to consumers online is important and useful in both NC and Tolima. Tourism is prominent in both places and the results show nearly identical reports for use of the Internet to get travel information (NC 76% and Tolima 73%). This finding suggests a high level of interest on the part of consumers to gain information about places to visit. Evidence of interest in other places is especially pertinent to the present study given we are comparing findings from two places on two different continents. Lastly, for this category, the results show that using the Internet for entertainment was high in both places (84% Tolima and 61% NC) indicating an advantage for those with access. The difference in use by place may be due to the options and or cost of other types of entertainment available to consumers and that calls for further study.

The last category in Table 2, "Employment/Economic Pursuits" shows mostly differences in types of Internet use. Reports of using the Internet for job related tasks has the relatively smallest difference (12%) between NC and Tolima (57% and 69% respectively) followed next by online sales (26% and 44% respectively). The finding with the largest contrast between places is the use of the Internet for Webinars with almost three times as many Tolima respondents (77%) reporting this activity compared to NC respondents (26%). The high use in Tolima suggests that those without Internet access experience a much different means of acquiring information.

Taken together, these findings provide information about how respondents use the Internet as a resource or tool in their daily lives.

Examining the advantages of having Internet access in terms of types of activities further clarifies the disadvantages of the digital divide. The results suggest some variation in levels of digital literacy with activities involving minimal

Table 2. Ways that People with Access to the Internet Use It. Percent responding "Yes" to "How do you use the Internet/*What activities do you do online*?"

Use of/*Activities on Internet*	NC Citizen Survey	*Tolima Vive Digital Project*
Communicate with Others		
Check email/*Communicate by email*	95	*92*
Social networking/*Communicate by social media*	63	*89*
Consumerism		
Shop, pay bills/ *Buy products*	81	*56*
Health information/*Health services*	79	*77*
Travel/ *Tourist information*	76	*73*
Entertainment/*Entertainment*	61	*84*
Employment/Economic Pursuits		
Job related tasks/*Paperwork*	57	*69*
Search for a job/*Look for a job*	40	*67*
Webinars/*Virtual training courses*	23	*77*
Online Sales/ *Sell products*	26	*44*
N	970	*463*

technological skills, such as those associated with communication showing the highest use.

CONCLUSIONS

In recent years, both developed and underdeveloped countries have acknowledged that the Internet is a key tool for economic development. In turn, they have invested significant resources to improve connectivity and provide more access to the Internet. However, there are still barriers that prevent wider and better use of this tool. These facts are reflected in NC and Tolima, two places with different social, cultural, and economic contexts but with a common denominator: the persistence of a digital divide. This problem is due to identifiable factors. First, use of the Internet requires access, which refers to having access to a computer and a connection. Then, user knowledge or level of digital literacy is necessary to maximize the benefits of the tool. Second, Internet use depends on the capacity of the government, economy, and education sectors to provide and integrate services to citizens. Thirdly, Internet use for commercial activities is highly related to access to financial services such as having a bank account or having a credit card. This imposes a serious limitation on low-income people who lack stable and formal employment. In sum, elimination of the digital divide requires not only reducing inequality in Internet access but also closing gaps and social inequalities in other areas of social life.

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