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Internet use and the role of the public library in ethnic communities:
A comparative case study in New York City

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-A comparative case study in New York City

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Abstract

Internet use and the role of the public library in ethnic communities -A comparative case study in New York City

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Abstract: The internet has grown rapidly with the global development of information communication technologies. But it also creates a digital divide in disadvantaged communities such as those found in ethnic minority neighborhoods. Historically, public libraries provide open and free access to information, and they have long been a critical resource to ethnic communities. More recently, they have become more than a community center, expanding into becoming a technology hub, especially for internet use. Public libraries could play a positive role in enhancing low-income ethnic communities' internet use and narrowing the digital divide. This research explores library roles in countering the digital divides for ethnic communities in New York; it specifically (1) identifies differences in internet usage between Chinese and Hispanic immigrant patrons of public libraries in New York City; (2) examines the role of the public library as a local agency for promoting ethnic communities' internet use and narrowing of the digital divide. Accordingly, this research focuses on two ethnic groups, Chinese and Hispanic, in New York City's three boroughs of Manhattan, Bronx and Staten Island, who patronize the local branch of their public library. Based on the findings from this sample, race in and of itself did not play a significant role for either utilization or individuals' capability of using the internet. However, these different ethnic communities demonstrated unique internet-use characteristics and patterns that together may outline how ethnic communities approach

libraries and therefore, in turn, how libraries might remediate digital inequities. Age, education, and the number of internet users at home influenced internet use patterns for these two ethnic communities. Additionally, this research, through measurements on both Internet utilization and capability scales, reaffirms that the public library is a positive agent in promoting internet use among ethnic communities. Finally, this project offers libraries specific, micro-level policy suggestions based on the internet-use patterns of these two ethnic communities to better meet local needs, especially for those frontline librarians or staff working with patrons. It also intends to serve as a model for studying other ethnic groups and areas while raising the library's visibility regarding not only internet use but also acculturation via the bonds formed among ethnic communities.

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Introduction

The internet,¹ both in term of infrastructure and content, has grown rapidly since it was created (Internet Society, 2014). From an infrastructural perspective, *internet* means “a globally connected network system that uses Internet protocol suite (Transmission Control Protocol/Internet Protocol) to transmit data via various types of media (“Definition”, n.d., para. 1);² when it comes to its content, *internet* means a cost-effective communication method, including but not limited to such services as: e-mail, web-enabled audio/video services, online games and gaming, data transfer/file-sharing via File Transfer Protocol, instant messaging, internet forums, social networking, online shopping, financial service, etc (“Communications”, n. d., para. 1).³ Currently, the internet is embedded in our daily life, from our households to our workplaces, from business to public service, except for those who suffer from a digital divide. Access to this technology brings many important benefits to individuals and the community, as the information the internet carries means everything in the context of the information society. However, barriers to access could disadvantage certain groups or individuals, just as barriers to labor, wealth, etc. have functioned in the past. Such a lack of information exchange, or “information poverty” (Norrie, 2001), causes “a gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities. The digital divide reflects various differences among and

¹ Different publishers have their own conventions on capitalization of Internet versus internet. In this paper I am using “internet” as a generic term.

² Definition. (n.d.). In *Technopedia*, retrieved from <https://www.techopedia.com/definition/2419/internet>

³ Communications. (n.d.). In *Technopedia*, retrieved from <https://www.techopedia.com/definition/2419/internet>

within countries” (OECD, 2001, p. 5). Various stakeholders such as academic scholars, governmental and non-governmental organizations, and foundations have been involved with the digital divide, focusing on different aspects of the issue, including infrastructure, skills or digital literacy, connectivity, and the economic gap.

The United States has been historically a nation of immigrants with “different national origins or racial and ethnic backgrounds,” who eventually “assimilate into a unified identity and become Americanized with the passage of time” (Zhou, 1992, p. 1). The United State Census Bureau estimates that in 2010, over 13% of the U.S. population (40 million) were immigrants, defined as people residing in U.S. but not U.S. citizens when they were born.⁴ The internet, as one of the fastest growing forms of technology, plays a significant role in immigrants’ lives. Compared to native residents, immigrants use the internet not just for daily information and communication needs but also for local community involvement. But with 13% of Americans who don’t use internet,⁵ another 33% of Americans without residential broadband,⁶ and a number of people lacking digital literacy, the library can be an important site for providing internet connectivity and digital literacy in local communities. In the past, scholars and researchers have reached out to immigrants who use internet at home or on their own devices, investigating different outcomes on cultural assimilation or civic engagement (Mitra, 2000; Norris, 2001; Alba, Nee, 2003; Aldridge, 2003; Matei, Ball-Rokoeach, 2003; Parham, 2004; Torres, 2005; Navarrete, Huerta, 2006; Colley, Malthy, 2008; Chen, 2010). However, many have overlooked the role of the public library as an internet provider for patrons who might not be

⁴ U.S. Census Bureau, data retrieved from American Factfinder:
https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

⁵ Perrin, A., and Duggan, M. (2015). *Americans’ Internet Access: 2000-2015*. Data retrieved from: <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/>

⁶ Horrigan, J. B., and Duggan, M. (2015). *Home Broadband 2015*. Pew Research Center. Data retrieved from: <http://www.pewinternet.org/2015/12/21/home-broadband-2015/>

able to afford internet service or mobile devices at home due to low family income. The internet is about openness and equality, so no one should fall behind. Thus, this thesis examines how immigrants adopt internet use with the help of the local public library and the role the public plays in the process.

To do this, I use a dataset from a study of the New York Library Hotspot Lending Program, which mainly focuses on Hotspot devices lent out by the New York Public Library inside the geographic border of New York City. New York City is one of the most diverse cities in the world, intertwining various races and ethnicities, classes, careers, and levels of educational attainment. Furthermore, the New York Public Library has a long history of providing services to the city's large population of immigrants. The goal of the New Americans Program, which was initiated in by the New York Public Library, is "to expand library services to immigrants whose primary language is not English, and to attract newcomers to the library and assist them in adjusting to their new surrounding through acquisition of appropriate materials and creating of special training program, workshops, and services, while fostering an appreciation for their unique cultural makeup" (quoted in Gitner, Chan, 2001, p. 122). Thus, New York City serves as an ideal location for this investigation. Moreover, New York City is home to one of the largest Asian ethnic enclaves in North America, making up 11.8% of the city's population, with those of Chinese descent comprising the largest subcategory (445,145 people in 2010). Additionally, 27.5% of the city's population is Hispanic or Latino (of any race), making New York City the largest Hispanic city in the United States in 2010.⁷ I examine these two ethnic communities as a way to probe the role of race/ethnicity and also other significant factors in internet use, while also investigating how the public library fits into the context of the digital divide.

⁷ Data retrieved from 2010 U.S. Census. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

Chinatown and the Chinese Immigrants of New York City

Chinatown is often the label for an ethnic enclave of Chinese or Han people outside mainland China or Taiwan, usually within an urban setting. New York City serves as such a setting with one of the largest Chinese populations in North America. Manhattan's Chinatown is one of the U.S.'s largest and oldest Chinatowns, concentrating numerous Chinese-Americans and recent Chinese immigrants. Its emergence can be traced back to the anti-Chinese campaign on the West Coast and the Chinese Exclusion Act. The so-called Old Chinatown of Manhattan was in a ten-block area bounded by "Canal Street on the north, Park Row on the south, Baxter Street on the west, and the Bowery on the east on the Lower East Side of Manhattan" (Zhou, 1992, p. 6); today, Chinatown expands over its ten-block boundary uptown to "Houston Street and to Essex Street on the east, with some clusters near Fourteenth Street" (Zhou, 1992, p. 6).

Rapid decentralization and gentrification, however, are affecting Old Chinatown, while satellite Chinatowns are being established in outer boroughs. Flushing, Queens is one example. This satellite Chinatown first emerged as "Little Taipei" with more Mandarin-speaking immigrants than the old Chinatown in Manhattan, which was dominated by Cantonese-speaking, working-class immigrants (Zhou, Kim, 2003). Due to language barriers and poor living conditions, Taiwanese immigrants tended to move out of the old Chinatown in order to seek higher educational resources and, most importantly, better living conditions. Thus, Flushing attracted more Mandarin-speaking immigrants who were from other parts of the Chinese mainland beyond the Canton province. Meanwhile, other satellite Chinatowns, like Elmhurst, Corona, and beyond were also spreading (McGlenn, 2002, p.115).

Graham Avenue and Hispanic Immigrants in New York City

As an ethnically diverse nation, the United States has 50.5 million people of Hispanic or Latino origins (16%); the largest three segments include Mexicans (63%), Puerto Ricans (9.2%), and Cubans (3.5%).⁸ New York City has the largest Hispanic community and population in the United States with 2.3 million Latinos (U.S. Census, 2010). Most Hispanics in New York City are of the Puerto Rican heritage (33%); the second largest group is Dominican (25%); and the third is Mexican (13%) in 2010.⁹

According to the 2011 American Community Survey, Hispanic communities are very diverse in different NYC boroughs. Fifty-four percent of the Bronx's population is Hispanic, primarily Puerto Rican.¹⁰ The Puerto Rican population is significant throughout the Bronx, with a slightly higher concentration in the South Bronx (U.S. Census, 2010). Brooklyn also has several neighborhoods with a growing Puerto Rican presence, like Bushwick and Williamsburg, particularly Graham Avenue, also known as the Avenue of Puerto Rico (Korrol, 1994). Other major Dominican communities are located in Washington Heights and Inwood, Manhattan, and Bushwick, Brooklyn (Hoffnung-Garskof, 2008). As New York City's fastest growing ethnic group since 2000, Mexican communities mainly concentrate in Sunset Park and Flatbush, Brooklyn, and Elmhurst and Jackson Heights, Queens (Teachers College Newsroom from Columbia University, 2003)

⁸ Data from 2010 U.S. Census. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

⁹ According to a 2013 study conducted by Center for Latin American, Caribbean and Latino Studies at City University of New York Graduate Center, Dominicans (747,473) have likely outnumbered Puerto Ricans (719,444) in New York City. Retrieved from: <http://clacls.gc.cuny.edu/files/2014/11/AreDominicansLargestLatinoNationality.pdf>

¹⁰ Total population of Bronx is 1,392,002; the population of Hispanic or Latino is 748, 438. Retrieved from U.S. Census Bureau, 2011 American Community Survey.

Internet Use in America, the Hispanic Community, and the Asian American Community

As of 2016, 88% of U.S. adults (over 18) are using the internet according to Pew Research Center in 2017. There are differences in usage across age groups: 99% for adults between 18-29 years old, 96% for those 30-49, 87% for 50-64, and 64% for 65 and above (“Who use the internet”, 2017, para. 1). Meanwhile, 89% of men and 86% of women are using the internet. There are also differences in usage across race and ethnicity: 88% for White Americans, 85% for Black Americans, and 88% for Hispanic Americans. For those whose annual income is less than \$30,000, only 79% use the internet, while those whose annual income exceeds \$30,000 exhibit a 90% usage rate (90% for \$30,000-49,999; 95% for \$50,000-74,999; 98% for \$75,000 and above). Internet use also has a positive correlation with education: from “less than high school graduate” to “college graduate,” the percentages go from 68%, to 81% (high school graduate), 94% (some college) and 98%. In different locations, 89% of urban Americans are using the internet, while 90% of suburban and 81% of rural Americans go online.¹¹

Specifically, for the Hispanic American community, a 2015 National Survey of Latinos by Pew Research Center shows that of the 84% of Hispanic Americans population using the internet, 86% are male and 81% are female. Internet use is 95% among Hispanics younger than 30, and 93% among those between 30-49, dropping significantly to 67% among those ages 50-64 and only 42% among those ages 65 and older. Hispanic American educational attainment also creates a gap in internet use: 88% of high school graduates and 95% of those with some college or more are using the

¹¹ Data retrieved from Internet/Broadband Fact Sheet conducted by Pew Research Center: <http://www.pewinternet.org/fact-sheet/internet-broadband/>

internet, while for those with less than a high school degree, the percentage drops to 67%. Also, family income matters: 79% of Hispanics whose annual family income is less than \$30,000 use the internet, while 97% of those who earn \$50,000, and 90% of those who earn between \$30,000-\$49,000 use the internet. Additionally, the Pew Research Center points out that even though the growth in the rate of internet use among major racial groups in the U.S. has slowed down, it continues to rise among Hispanics—from 78% to 84% between 2012 to 2015.¹²

Often labeled the “model minority” in the immigrant community, Asians might have an advantage over other ethnic groups. Four Pew Research Center surveys prove this point (Perrin, 2016).¹³ At least in terms of technology use and internet adoption, the Asian population exceeds other populations, including whites. Three key findings on English-speaking Asian Americans are noteworthy:

(1) Ninety-five percent of English-speaking Asian Americans used the internet in 2015, compared to 87% of whites, 81% of blacks and 82% of Hispanics;

(2) Eighty-four percent of English-speaking Asian Americans have broadband service at home, which is nearly 20% higher than that of the overall population (67%), and those of whites (72%), blacks (54%), and Hispanics (50%);

¹² Data from Brown, A., López, G., and Lopez, M. H. (2016). *Digital Divide Narrows for Latinos as More Spanish Speakers and Immigrants Go Online*. Pew Research Center. Data retrieved from: <http://www.pewhispanic.org/2016/07/20/digital-divide-narrows-for-latinos-as-more-spanish-speakers-and-immigrants-go-online/>

¹³ Surveys were conducted on March 17th - April 12th, 2015; May 28th - 31st, 2015; June 10th - July 12th, 2015; October 13th – November 15th, 2015.

(3) For smartphones, 91% of English-speaking Asian Americans own one, which has increased by 20 points, from 71% to 91% in three years (2012-2015). By contrast, 66% of whites, 62% of blacks, and 65% of Hispanics are smartphone owners.¹⁴

However, in all of these surveys, non-English-speaking Asian Americans are excluded. Of these, a large number are from low-income families that typically cannot afford internet service at home. Thus, whether or not their internet use rate is similar to English-speaking Asian Americans is uncertain so far, which might be revealed in the research study data that follows below.

¹⁴ Data from Perrin, A. (2016). *English-speaking Asian Americans stand out for their technology use*. Pew Research Center. Data retrieved from: <http://www.pewresearch.org/fact-tank/2016/02/18/english-speaking-asian-americans-stand-out-for-their-technology-use/>

Literature Review

In this part, I look back to technological determinism as one theoretical approach to understanding internet use, while also examining technology's influence on social change. Next, I bring in the concept of the "digital divide," which reflects digital inequality under the global technological wave, especially as related to the internet. I dig into its definition, implications, and practical solutions. In the third part, I turn to assimilation theory within the context of information and communication technologies (ICTs) because my ultimate goal is to explore immigrant acculturation communities via ICTs. Lastly, I discuss the role of the public library in the community from a policy perspective. Hopefully, the last chapter could be regarded as a practical tool for immigrants' acculturation with the help of ICTs.

Internet Use and Theoretical Background

Technological determinism describes technology as "the dominant factor in social change but its influence derives from the cultural meaning or importance given to it by people"; it also emphasizes "an inevitable or autonomous technological order based on certain laws" (Bimber, 1990, p. 333). Many scholars link the concept with Karl Marx's work, as technology and machinery play an important role in his writing. For instance, Heilbroner (1961) bridges the "basic Marxian Paradigm" with the technological. Winner (1977) argues that Marx built up the foundation of a "coherent theory of autonomous technology" (p. 39). Shaw (1979) associates Marx's theory on the forces of production to technological determinism. Hansen (1921) even claims that Marx conceived of social processes in technological terms rather than economic ones. And Mumford (1966) further

offers the assessment that “Marx erroneously assumed that technical forces evolved automatically and determined the character of all other institutions” (p. xv). However, an opposite perspective dissociates Marx from technological determinism: Miller (1984) emphasizes that work relations are an independent force in history, and thus Marx didn’t actually focus on technological forces; Rosenberg (1979) claims Marx’s view on historical change is that it is more a social process rather than a technological one.

While Marxism might bear an ambivalent relationship to technological determinism, another aspect of the approach is “autonomous”. As Chandler (1995) critiques, “[R]ather than as a product of society and an integral part of it, technology is presented as an independent, self-controlling, self-determining, self-generating, self-propelling, self-perpetuating and self-expanding force. It is seen as out of human control, changing under its own momentum and ‘blindly’ shaping society” (p. 15). French sociologist Jacques Ellul is one such theorist from this school of thought who claims that “Technique has become autonomous; it has fashioned an omnivorous world which obeys its own laws and which has renounced all tradition” (Ellul, 1964, p. 14). Winner (1997) adapts this doctrine, arguing that technology is shaped by technology itself rather than society. Freedman (2010) notes that Raymond Williams also recognizes the simplicity and hegemonic power of technology; however, Williams (1975) restores the social context to the process, as technology should be viewed as an intentional process of research and development guided by “social needs, purposes and practices to which the technology is not marginal but central” (p. 14). He also neutralizes the role of the citizen, asserting that “if technology is a cause, we can at best modify or seek to control its effects” (Williams, 1975, p. 10).

Alternative perspectives on technological determinism share one common feature: they all affirm the importance of technology to today’s society and every individual living in it. Driven by the

development of technology, scholars have introduced a new stage of social processes in human history as the Information Society, one that follows the Industrial Society and the Agrarian Society. The Information Society is defined as “a society based on information and knowledge” (Isazaheh, 2004, p. 2), where “the creation, distribution and manipulation of information have become the most important economic and cultural activity” (UNDP, 2008, p. xiv). The concept of the Information Society is congruent with globalization as both see the flow of information as blurring geographic borders and embracing “openness” and “competence” (Isazaheh, 2004). Running parallel with the development of human society has been the exchange of information between people and networks of people. However, the exchange of information based on ICTs “has radically changed the scale of this exchange, and factors such as non-temporal patterns of information and the dissemination of information have become more important than ever” (UNDP, 2008, p. xiv). Thus, within the Information Age, the internet has become the global system of information, especially since the application of the World Wide Web in the 1990s, and has been central to development on many fronts (Pew Research Center, 2014).

The past thirty years have seen the gradual incorporation of ICTs and the internet in many domains. Educational applications have been especially prominent, in part because younger people are exposed very early to a technologically-mediated environment. Internationally, there are many empirical surveys focusing on college students’ internet use because “internet usage is most prevalent among younger and more educated people” (Bashir, Mahmood, & Shafique, 2008, p. 52). These surveys span North America, Malaysia, India, Turkey, Nigeria, and beyond (Hong, Ridzuan, & Kuek, 2003; Ruzgar & Selver, 2005; Kumar & Kaur, 2006; Sahin, Balta, & Ercan, 2010; Ani, 2010). Universally, they find that both students and faculties appear to have positive attitudes toward the internet as a crucial tool in college life because of its ability to increase access to information and

improve communication. Internet use is also growing rapidly among academic communities (Berson, 2000). However, the adoption of the internet and related tools often occur under the guise of improved education and improved opportunities for students. This raises the matter of whether all students – indeed all people – have the ability to engage these tools. Consequently, when discussing race/ethnicity, generational differences, socio-economic status, and educational inequities, scholars often engage with the issue of the “digital divide” when discussing internet use (Norris, 2001; Compaine, 2001; Blau, 2002; Warschauer, 2003; Mossberger, Tolbert, and Stansbury, 2003; Van Dijk, Hacker, 2003; Fairlie, 2004). By the second decade of the 21st century, digital divides are referenced in many domains, including health, labor, social identity, and education.

Digital divide

The digital age is seen as “decentralizing, globalizing, harmonizing, and empowering” (Negroponte, 1996, p. 229) and also is “characterized by decentralized ownership and equity” and by the “power of the bottom, where peers hold sway” (Kelly, 1999, p. 15, p. 177). Thus, some scholars would frame digital technology as a positive asset in the millennium, believing that the internet provides “global access to information, democratization of information” and “bring[s] humanity together” (Colley, Maltby, 2008, p. 2009). However, as the National Telecommunication and Information Administration and scholars argue, a divide exists in the digital age—a “digital divide” (NTIA, 1995; Yu, 2006; Hilbert, 2011). The digital divide refers to the gap in access to and usage of ICTs in certain communities. Traditionally, the digital divide is seen as a “have” or “have-not” question, as Compaine (2001) points out. Alongside the development of ICTs, especially the global growth of mobile phone usage, the definition of inequality has expanded to include having more or

less bandwidth (also referred to as “speed”), and more or less skills (Blau, 2002; Hargittai, 2003; Mossberger, 2003; Hilbert, 2014). Furthermore, grounded in the diffusion of innovations theory, Hilbert (2011) conceptualizes the concept of the “digital divide” by asking the question, “Who, with which characteristics, connects how, to what?” (p. 727). Hilbert (2011) claims all studies and approaches to the “digital divide” could fall into four sub-categories as follows:

1. WHO (choice of subject): individuals vs. organizations/communities vs. societies/countries/world regions, etc.;
2. with WHICH characteristics (attributes of nodes and ties): income, education, geography, age, gender, or type of ownership, size, profitability, sector, etc.;
3. connects HOW (level of digital sophistication): access vs. actual usage vs. effective adoption;
4. to WHAT (type of technology): phone, Internet, computer, digital TV, etc. (p. 727).

Previously scholars attended primarily to the “HOW” questions (access to internet) because “the extent and the nature of this divide depends on the kind of access defined” (Van Dijk, Hacker, 2003, p. 315). Van Dijk (1999) identifies four kinds of barriers embedded in the multifaceted concept of access:

1. Mental access: Lack of elementary digital experience caused by lack of interest, computer anxiety, and unattractiveness of the new technology;
2. Material access: No possession of computers and network connections;
3. Skill access: Lack of digital skills caused by insufficient user-friendliness and inadequate education or social support;
4. Usage access: Lack of significant usage opportunities (p. 197-202).

The Pew Research Center's report of *Americans' Internet Access: 2000-2015* shows the differences that exist among ages, classes, races/ethnicities, and communities for Americans' internet access (Perrin & Duggan, 2015). For "young adults, those with high levels of education, and those in more affluent households, internet penetration is at full saturation levels" (Perrin & Duggan, 2015, para. 1); however, for "older adults, those with less educational attainment, and those living in lower-income households, adoption has historically been lower but rising steadily" (Perrin & Duggan, 2015, para. 1). As the report claims, "[D]igital gaps still persist" (Perrin & Duggan, 2015, para. 1).

Scholars have also investigated the functions of ICTs while evaluating the consequences of the digital divide. ICTs influence individuals' social capital, helping them become more involved in their local environment. Mossberger, Tolbert, and Gilbert (2006) point out how the ability to use information technologies could enable individuals to participate fully in society, which they conceptualize as "digital citizenship" (p. 585). Warschauer (2003) believes that ICTs can promote social inclusion, and that technological capabilities and access are integral to inclusion. Furthermore, digital technology impacts individual and organizational economics. A report released by Sungard Availability Services (2010) notes that among 2,100 information technology executives and staff office employees, a correlation exists between working skills and technology, as well as organizational success and technological advancement. On a macroeconomic level, Dean, DiGrande, Field, and Zwillenberg (2012) point out in their "Digital Manifesto" that the real economy¹⁵ is shifting its foci to the digital all over the world, and that the lack of information technology, such as inferior

¹⁵ Real Economy is defined as "The part of the economy that is concerned with actually producing goods and services, as opposed to the part of the economy that is concerned with buying and selling on the financial markets." From Pearson Longman Business English Dictionary.

infrastructure, or lower levels of access to information technology, such as “red-tape” or excessive regulation, might damage the development of the overall economy.

It seems clear that some divides are associated with racial and ethnic minorities, particularly when compounded by low-income levels among these groups. Surveys conducted by the National Telecommunications and Information Administration (NTIA, 1995) and Perrin and Duggan (2015) concluded that in America, African-Americans and Latinos have lower access to computers and the internet. Other scholars have also examined how race/ethnicity relates to the digital divide (Fairlie, 2004; Mossberger, Tolbert, & Stansbury, 2003; Mossberger, Tolbert, & Gilbert, 2006). Among these, most have reached similar conclusions, with the exception of Walsh (2001) who found that Latinos had a higher ratio of internet access than Caucasians. Nevertheless, some scholars dismiss the role of race/ethnicity (Nie & Erbirng, 2000), and Mossberger et al. (2006) notes that these surveys either “suffered from methodological flaws” or “lacked multivariate statistic control” (p. 615). However, most researchers and scholars factor in race/ethnicity into their examinations of the digital divide.

The digital divide may also have a negative influence on children’s educational achievement. According to the Federal Communications Committee Broadband Task Force (2009), 70% of teachers assign homework requiring access to broadband internet and 65% of teens go online at home to complete internet-related homework. Until 2015, even though most American homes with school-age children did have broadband access, Horrigan (2015) found in an analysis of the U.S. Census Bureau’s American Community Survey data that 5 million households with school-age children did not have high-speed internet service at home; even more significantly, the study found that low-income households and especially Black and Hispanic families “make up a disproportionate share of that 5 million,” which has created a “homework gap” (para. 4).

Previous attempts to deal with the digital divide argue that “markets and people... are supposed to solve all problems by themselves”, and the digital divide is not “about the need or rejection of government intervention” (Van Dijk & Hacker, 2005, p. 315). Policy-makers and related institutions were to shoulder their own responsibilities; for example, NTIA’s report in 2002 argues that “by identifying those who are truly in need, policymakers can prudently and efficiently target support to these information disadvantaged” (“I. Background”, para. 5). By broadening the definition of “internet access” from mental and material access to skill and usage access (Van Dijk, 1999), scholars began offering different approaches to narrowing the digital divide from a policy perspective (Compaine, 2001; Hargittai, 2003; Warschauer, 2003; Fairlie, 2004; Van Dijk & Hacker, 2005; Mossberger, Tolbert, & Gilbert, 2006; Hilbert, 2011; Strover, 2014). Strover (2014) provides a comprehensive analysis at the macro level with reference to mobilizing all the stakeholders involved according to the latest information technology development trends after the first decade of the millennium. She advocates (1) collecting the price data of internet access; (2) bringing in the role of conventional service providers; (3) supporting public libraries financially as an inroad for digital literacy; (4) mobilizing non-profit organizations to educate and train users who are not technologically-savvy; and (5) making good use of mobile communications, especially cell-phone based internet access (Strover, 2014, pp.118-119).

ICTs and Assimilation Theories

Given the statistics presented earlier concerning the participation of minority groups in the Information Society, and with the internet and ICT more specifically, some scholars have investigated how these technologies and the access to information they provide could influence cultural processes

such as identity and group affiliation. Assimilation, “integration,” or “incorporation,” are dated concepts, but they refer to the “process by which the characteristics of members of immigrant groups and host societies come to resemble one another” (Brown & Bean, 2006). The process of “assimilation” is embedded within economic and sociocultural dimensions, and lasts from the first generation through the second and beyond (Brown & Bean, 2006). While the core topic of my project does not attempt to comprehensively address assimilation or social identity formation in relation to the Internet, it does address how ethnic and racial minorities can mobilize the technologies of opportunity in the American setting, technologies that often include ICTs.

Generic Chinatowns or Hispanic neighborhoods are two types of immigrant or ethnic enclaves often seen as “a form of segregation” or “an obstacle to assimilation,” and imparting a “sensation of an exotic culture” for some (Zhou, 1992). Several theorists have analyzed immigrant enclaves and assimilation. The classic assimilation model dates back to the Chicago School in the 1920s, which claims that ethnic groups tend to be drawn into the economic mainstream and gain social acceptance via their educational and occupational achievement, no matter their national origins or racial and ethnic background – like a “melting pot” (Gordon, 1964). Later, other scholars acknowledged the role of certain institutions in achieving assimilation, including those bolstered by Civil Rights legislation (Alba & Nee, 2003).

However, some argue that the assimilation of many immigrant communities still remains blocked, contributing to a racial/ethnic disadvantage model or an “ethnic-cultural” approach (Glazer & Moynihan, 1970; Portes & Manning, 1986). This point of view posits that racial and ethnic pluralism—as evidenced in language and cultural familiarity—could be an obstacle for achieving mobility. However, for various new immigrants and their descendants, the scenarios of assimilation might become embedded with more diversity, deviating from a “straight-line” course. Portes and

Zhou (1993), for example, combine both of the models mentioned above into a new framework called “segmented assimilation,” which was further elaborated and empirically tested by Portes and Rumbaut (2001). This model focuses on identifying the contextual, structural, and cultural factors that separate successful assimilation from unsuccessful, or even “negative,” assimilation (Brown & Bean, 2006). It claims that the second generation could find itself “ascending into the ranks of a prosperous middle class or join[ing] in large numbers the ranks of a racialized, permanently impoverished population at the bottom of society” (Portes, Fernández-Kelly, & Haller, 2005), and pinpoints three possible outcomes for a second generation: upward assimilation, downward assimilation, and upward mobility combined with persistent biculturalism (Waters, Tran, Kasinitz, & Mollenkopf, 2010, p. 1196). These three paths correspond to three different processes, which describe the relations among second generations, their parents, and the ethnic community: consonant, dissonant, and selective acculturation (Waters et al., 2010, p. 1169). In their empirical testing of acculturation and socioeconomic mobility in young adulthood, Waters et al. (2010) found that selective acculturation is an attractive concept, which “recognizes the fear of many immigrant parents that their children are Americanizing too quickly” (p. 1189). More importantly, this framework also provides an alternative understanding of acculturation for policy-makers or social workers, suggesting that “the lives of inner-city second-generation youths can be improved by strengthening the bonds of social capital within their ethnic communities, encouraging bilingual education, and strengthening family ties” (Waters et al., 2010, p. 1189).

Where might ICTs fit in this framing of acculturation? If selective acculturation is the most desirable path for immigrant communities, how might the internet play a role? Exploring internet use and community interaction within immigrant communities, scholars have added further nuance to this question by posing two others: (1) How does internet use facilitate interaction with home countries?

(2) How does internet use affect acculturation in host countries that emphasize self-identity? In answering the first question, some argue that ICTs are “fundamental to maintain social connections with the community of origin” (Navarrete & Huerta, 2006, p. 5). Scholars also have examined immigrant communities from different origins and their use of various digital platforms, like Indians in the United States and Europe, Haitians in New York and Florida, Mexicans in the United States, etc. (Rao, 1998; Mitra, 2000; Parham, 2004; Torres, 2005). To answer the second question, Chen (2010), through an empirical quantitative study of mainland Chinese immigrants in Singapore, examined the relationship between internet surfing, online communication, and immigrants’ adaptation to the host country, finding that if immigrants stay longer in the host country, they are more likely to surf websites in the host country and less likely to access websites in the home country. Aldridge (2003) undertook a qualitative study of Salvadoran immigrants in Athens, Georgia, analyzing how internet access helped respondents not only remove the information barriers in their host country but also build up connections with the home country. For instance, respondents who used websites that translated English to Spanish found that it actually “raises the possibility that Internet access may reduce their motivation to learn English” (Aldridge, 2003, p. 126). Thus, Aldridge (2003) concludes that the internet is “both a facilitator and a barrier to adaptation” (p. 136), an observation that actually echoes the “flip-flop” process of acculturation found in the segmented assimilation model. Additionally, the Annenberg School for Communication and Journalism at the University of Southern California’s Metamorphosis Project investigated the comingling of geo-ethnicity, internet connectedness, and “belonging” through multilingual data collection in seven residential areas of the Los Angeles metropolitan area (Ball-Rokeach, Kim, & Matei, 2001). Researchers found that the internet, as the latest platform of communication technology, and internet connectedness are associated with civic participation, indirectly contributing to feelings of

“belonging” to a residential community (Matei & Ball-Rokeach, 2003). In this case, “belonging” means “an attachment to a residential area” (Ball-Rokeach, Kim & Matei, 2001, p. 392), a concept similar to “acculturation” as previously discussed.

The Public Library as Community Center and Hub for Technology

Among the many organizational supports for immigrants to the U.S., schools and libraries are conventionally thought to be important gateways to the process of building identity. Immigrants matter due to their contributions to different aspects of society, economically, socially, and politically. More importantly, as a part of a mature civil society, immigrants should never be segregated for any artificial reason. Due to language barriers, and technology gaps as well, many immigrants are isolated from the rest of the community. Alongside non-governmental organizations that aim to serve immigrant communities, the public library is a significant stakeholder in the process. The public library historically has provided open and free access to information, and it has long been a critical resource to immigrants. In the contemporary digital age, the library helps patrons attain even more information than ever before (Zickuhr, Rainie, & Purcell, 2013). Its role is constantly changing as well: whereas before it was a place which only provided information, now it is turning into a community center, helping people with information exchange, resource gathering, and event planning. More importantly, it helps the whole community stay connected with local needs and bridges the gap of digital divide.

The function of the public library may be even more significant for an ethnic community, where many non-native speakers lack fluent communication capabilities—especially when a library also provides services (books, classes, etc.) and information in the home language that the community

mainly speaks. As noted in *Library services for immigrants: A report on current practices*, “Public libraries in the United States have a long history of providing resources and education to immigrants” (USCIS & IMLS, 2006, p. 1).

This tradition may be traced to Andrew Carnegie’s support for public libraries as a place for “immigrant self-education, enlightenment, and the study of democracy and English” (USCIS & IMLS, 2006, p. 1). The need for services remains, and today a public library can offer and support community information referral services, English courses, job search assistance, literacy classes, assistance with gaining citizenship, and traditional resources for reading for entertainment and enlightenment. When it comes to public libraries, the data from the Pew Research Center on Hispanic trends shows both challenges and opportunities, especially for the foreign-born Hispanic community. On the one hand, the Hispanic community is less likely to visit a public library than other racial groups, white and black (72% vs. 83% and 80%) and also less likely to say “it would be very easy to use a library” when compared to white and black racial group (47% vs. 67% and 59%) (Brown, Lopez, 2015, para. 2). On the other hand, Hispanic patrons see the positive impact a library has on their life, as many respondents noted how a library’s closings would have a major impact on themselves and their families (40% vs. 26% vs. 32%) (Brown, Lopez, 2015, para. 11).

As one early 20th century distinguished librarian stated, “The public library is admirably situated as a place for informal public receptions which, in the entertainment of distinguished guests, may naturally bring together native and foreign born elements of the population, to the great increase of mutual respect and appreciation” (American Libraries Association Committee on Work with Foreign Born [ALACWFB], 1922, p. 229). By participating in immigrant organizations, cultural events for the immigrant community, lecture series, visits by international scholars, cooperating with

foreign language information services, newspapers, etc., the public library has long been conceived of as a community center (ALACWFB, 1922).

Additionally, library professionals are guided in their practices by the Library Bill of Rights, which guarantees library service to all sectors of the community regardless of their background (Luévano-Molina, 2001). On the federal level, furthermore, former president of the American Library Association (ALA), Barbara Ford, espoused the theme of “Global is Local” to emphasize the positive aspect of linking the globe while embracing the wave of immigration within the context of increasing global connection, economic integration, and transnational linkages (ALA Council, 1997). Emerging into a digital age, the ALA has updated the Library Bill of Rights: “[D]igital resources provide unprecedented opportunities to expand the scope of information available to users. Libraries and librarians should provide access to information presenting all points of view” (ALA, 2009, p. 8).

Most public libraries in America offer public internet access, and over 62% of libraries offer the only free internet access in their community; more than 90% of libraries provide digital literacy services such as “formal technology classes, online tutorials, and one on one help, etc.” (Hoffman, Bertot, & Davis, 2012, p.19). Additionally, the ALA clearly addresses public librarians’ responsibilities in its 2012 report, including the mission to “help children, adults, and senior citizens with topic specific tasks that increasingly require digital literacy, such as applying for jobs, accessing government resources, and completing school assignments” (ALA, 2013, p.16).¹⁶

One study of public library use in ethnic neighborhoods in New York City conducted in 2005 involved 200 libraries (Japzon & Gong, 2005). Besides analyzing factors such as race, class,

¹⁶ American Library Association. (2013). *Digital Literacy, Libraries and Public Policy: Report of the Office for Information Technology Policy’s Literacy Task Force*. Retrieved from: http://www.districtdispatch.org/wp-content/uploads/2013/01/2012_OITP_digilitreport_1_22_13.pdf

education, and spatial accessibility that had been previously examined in other, traditional library studies, Japzon and Gong (2005) also investigated a joint social-spatial dimension rather than focusing on only one factor. According to their results, Asians, as a significant major ethnic group in New York City, were the most influential variable in their regression analysis examining public library circulation, and the group with a high school education was the second most important variable in the regression — a finding that contradicted previous library research, which had indicated that college education should be a significant variable in library use (Van House, Nancy, 1983; Scheppke, 1994; Speer, 1995; Vavrek, 2000). The study's findings also provided insight into improving disadvantaged neighborhoods: it pointed out that increasing the number of library visitors was more important than increasing the frequency of existing library users' visits; in other words, public library use has a positive relation to social interaction, which means, "When a library branch is integrated to be part of the neighborhood and provides a public place for social interaction within the neighborhood, the neighborhood will likely support the work of the branch (Japzon & Gong, 2005, p. 461)."

Many other previous studies discuss the interaction between ICTs and immigrants' acculturation in the hosting country. However, a comparative perspective of race/ethnicity in internet use could reveal nuances among various groups in the context of the digital divide. It might also provide insights that could improve and adjust the demands of specific ethnic communities, especially in a culturally diverse metropolitan area with highly divided neighborhoods like New York City. Thus far, the majority of researchers have mentioned the impact different ICTs, such as the internet, have on immigrants' feelings of belonging to their communities, while most library studies focus on library use, such as circulation and patrons' activities, as a breakthrough point for acculturation, especially in ethnic, disadvantaged communities (Norris, 2001; Ball-Rokeach, Kim, & Matei, 2001; Compaine, 2001; Blau, 2002; Hargittai, 2003; Matei & Ball-Rokeach, 2003; Mossberger, Tolbert, and Stansbury,

2003; Van Dijk, Hacker, 2003; Warschauer, 2003; Mossberger, 2003; Fairlie, 2004; Japzon and Gong 2005; Mossberger, Tolbert, & Gilbert, 2006; Navarrete & Huerta, 2006; Hoffman, Bertot, & Davis, 2012; Zickuhr, Rainie, & Purcell, 2013; Hilbert, 2014; Brown, Lopez, 2015). Few studies have paid enough attention to the public library's role in internet use and public library's influence on patrons' acculturation. Thus, such a study may lead stakeholders, including policy-makers and librarians, to a new perspective, one that links internet use, public libraries, the digital divide and immigrants' acculturation. Hopefully, this empirical analysis contributes to the issues of the digital divide and assimilation, with practical protocols and policies.

Therefore, based on the literature reviewed and the existing gap within the research on this topic, my research questions are as follow:

RQ1: What are the differences between New York City's Chinese and Hispanic immigrant patrons' internet use, especially in terms of internet utilization and capability?

RQ2: What factors significantly impact ethnic communities' internet use based on utilization and capability?

RQ3: How does the role of the library function in these two groups' internet use for remediating the digital divide?

Method

This study focuses on two immigrant groups, the Chinese and Hispanic communities of New York City found in three boroughs (Manhattan, Bronx and Staten Island), as the object of research; both groups are patrons of the local branches of their public library. My research mainly relies on quantitative analysis with secondary data, while embedding qualitative data as a supplemental analysis. The data sources included a self-report survey completed by people who participating in a hotspot lending program, with both closed-ended and open-ended questions in the survey. The secondary quantitative data are from a survey administered by Strover et al., for the New York Library Hotspot Lending Program, and qualitative data were also gathered by her team using interviews and focus groups from the same project. The goals were as follows: (1) identify the differences in internet usage between Chinese and Hispanic immigrant patrons of public libraries in New York City; (2) examine the role of the public library as a local agency for promoting immigrants' internet use and narrowing the digital divide.

As mentioned earlier, the secondary dataset is part of the New York Library Hotspot Program study conducted by the Technology and Information Policy Institute at the University of Texas. A hard-copy survey was completed by library patrons on a voluntary basis in three boroughs of New York City: Manhattan, the Bronx, and Staten Island. By examining age, employment status, educational level, number of children and internet users at home, I differentiated internet usage patterns of two ethnic communities: Hispanic and Chinese. The survey was distributed in three languages: English, Spanish and Chinese. In addition to selecting the questionnaire's language, patrons were also asked: "What is your race or ethnicity?" and "What language do you speak at

home?” The sample contained 249 valid respondents in the target groups, with 161 Hispanic (64.7%) and 88 Chinese patrons (35.3%). Further details of the dataset are provided in the next chapter.

According to the Pew Research Center (Perrin & Duggan, 2015) and other previous research, I formulated eight hypotheses based on some presumptions about my respondents’ internet use patterns and the role of public library in local ethnic communities:

H1: There is a significant difference between Hispanic and Chinese communities’ internet use, both on utilization and capability.

H2: Age has a negative impact on internet use, both on utilization and capability. The older people are, the lower their scores on the utilization and capability scale.

H3: Employment status has a positive impact on internet use, both on utilization and capability. If people are employed, their scores on the utilization and capability scale will be higher than those who are unemployed.

H4: Education level has a significant impact on internet use, both on utilization and capability. The higher degree of education that people hold, the higher the score they will get on the utilization and capability scale.

H5: The number of children in a household has a positive impact on internet use, both on utilization and capability. The more children found in a household, the higher the patron’s score on the utilization and capability scale.

H6: The number of internet users in a household has a positive impact on internet use, both on utilization and capability. The more people in a household who use the internet, the higher the patron’s score on the utilization and capability scale.

H7: The frequency of visiting a public library has a positive effect on people's internet use, both on utilization and capability. The more frequently people visit the public library, the higher their score on the utilization and capability scale.

H8: The engagement level in a public library has positive effect on people's internet use, both on utilization and capability. As people engage in more activities at the public library, their score will be higher on the utilization and capability scale.

Data Analysis

Sample and descriptive statistics

The demographic profile of the Hispanic and Chinese respondents to the survey is summarized in Table 1, which contains the distribution of such factors as age, employment status, educational level, gender, number of children between 5-18 and number of internet users at the place of residence. There were 249 valid respondents in the target groups, with 161 Hispanic and 88 Chinese patrons:

Table 1. Demographic profile of Hispanic and Chinese community of New York City in the survey

	Hispanic(%)	Chinese(%)
<i>Race/Ethnicity</i>	64.7	35.4
<i>Age</i>		
18-29	15.5	3.4
30-49	45.3	13.6
50-64	22.4	29.5
Above 65	8.1	36.4
<i>Gender</i>		
Male	27.3	27.3
Female	59.0	60.2
<i>Employment Status</i>		
Employed full-time	32.9	21.6
Employed part-time	21.1	11.4
Not employed, Not looking for work	4.3	1.1
Not employed, looking for work	9.9	1.1
Student	5.6	3.4
Retired	14.9	45.5
<i>Education</i>		
Did not graduate high school	23.6	21.6
High school, GED, or equivalent	26.7	27.3
Technical, or vocation school	6.8	3.4
Some college or associate degree	10.6	11.4
College degree	15.5	10.2
Post College degree	5.0	1.1
<i>Number of children between 5-18 at the place of residence</i>		
None	23.6	27.3
1	15.5	13.6
2	13.0	4.5
3	8.7	0.0
4	2.5	3.4
More than 4	3.1	0.0
<i>Number of internet users at the place of residence</i>		
1	21.7	33.0
2	24.2	34.1
3	19.3	9.1
4	13.7	4.5
5 or more	8.7	1.1
I don't know	5.0	1.4
Total(N)	161	88

Independent Sample T-Test and ANOVA

Question 5 explores these two groups' internet use in terms of their utilization (what they are doing online), and Question 7 explores their internet use in terms of their self-reported capability (how well they do certain things online). The consistency of the scale items in Questions 5 and 7 was tested using Cronbach's Alpha: for the utilization scale of internet usage, the Cronbach's Alpha is .653, which is below what is considered desirable in this usable reliability statistic. The Cronbach's Alpha of capability scale of internet use is .91, which indicates strong internal consistency among the variables. In what follows, I compute the sum of the two different scales, (1) utilization (the range is from 0 to 12), and (2) capability (the range is from 0 to 20), and identify the differences between the two groups using the mean of the respective scales and related factors: race, employment status, educational level, gender, number of children, and internet users at home. Independent t-tests, ANOVA, and Chi-Square were used to test for significant associations between utilization/capability and race, employment status, and gender.

Race and utilization of internet

After eliminating non-respondents who hadn't filled out Question 5 ("In the past six months, have you used the Internet at home for any of the following reasons?") (n=21), I found that Chinese participants had a statistically significantly lower score on their internet use of utilization compared to Hispanic participants' score (see Table 2.1.1). In other words, the Chinese group engaged in fewer Internet-based activities. This is likely because the Chinese sample is on average significantly older, and older people tend to use the Internet less.

Table 2.1.1 Statistics of t-test between utilization and race

Group		N	Mean	Std. Deviation	t
Utilization of internet	Hispanic	146	4.096	2.630	2.337*
	Chinese	82	3.293	2.219	

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

According to the following t-test table of the component variables within the scale, race/ethnicity had significant associations with using the internet to “Find or apply for a new job,” “Check product before buying,” “Get banking or financial information,” “Help child with schoolwork” and “Connect with friends or family member.” Hispanic respondents were more likely to use the internet to “Find or apply for a new job” than Chinese respondents and to use the internet to “Check product before buying” than the Chinese group; the Hispanic group was also likelier to use the internet to “Get banking or financial information” compared to Chinese; and the Hispanic sample used the internet to “Help child with schoolwork” more than the Chinese group. Meanwhile, the Chinese group was likelier to use the internet to “Connect with friends or family member” (see Table 2.1.2). Many of these findings could be explained by the difference in age of the two communities. In the sample pool, 68.9% of the Chinese were above 50, and also 45.5% of them were retired. Thus, they likely wouldn’t need a job and perhaps have less need of banking information, nor would they feel comfortable or capable of online shopping. Furthermore, 55.8% of Chinese had no children living with them, and thus they didn’t need to help children with their homework (see Table 1).

Table 2.1.2 T-test table between variables of utilization and race

Variables of Utilization	Race	Mean	Std. Deviation	t
Find or apply a new job	Hispanic	.38	.486	2.463*
	Chinese	.22	.416	
Learn job-related skills (such as certification)	Hispanic	.23	.424	-1.385
	Chinese	.32	.468	
Complete work for my current job	Hispanic	.06	.241	-.336
	Chinese	.07	.262	
Read news/current events	Hispanic	.53	.501	1.458
	Chinese	.43	.498	
Check product before buying	Hispanic	.38	.486	2.259*
	Chinese	.23	.425	
Watch something entertaining	Hispanic	.42	.495	.585
	Chinese	.38	.488	
Information about health	Hispanic	.51	.502	.099
	Chinese	.50	.503	
Get banking or financial information	Hispanic	.20	.400	1.995*
	Chinese	.10	.299	
Help child with schoolwork	Hispanic	.45	.499	5.504**
	Chinese	.11	.315	
Connect with friends or family member	Hispanic	.27	.448	-2.004*
	Chinese	.40	.493	
Get directions	Hispanic	.45	.499	1.816
	Chinese	.33	.473	
Complete forms for health/other services	Hispanic	.23	.420	.326
	Chinese	.21	.408	

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Race and capability of internet use

After eliminating non-respondents who hadn't responded to Question 7 ("Which of the following do you feel capable of doing?") (n=24), I found that Chinese participants had statistically significantly lower scores on their self-reported internet capability compared to Hispanic participants' scores. This is likely because the Chinese sample is on average significantly older, and older people tend to have less skill or capability with the Internet.

Table 2.2.1 Statistics of t-test between capability and race

Group		N	Mean	Std. Deviation	t
Capability of internet use	Hispanic	147	10.381	5.592	2.450*
	Chinese	78	8.474	5.481	

*Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.*

As I did for assessing utilization, I also located specific indicators within the capability scale. According to Table 2.2.2, race/ethnicity had significant associations with “Uploading content like videos or photos to a website,” “Adjusting privacy settings online,” “Creating my own personal website,” and “Recognizing a phishing request.” The Chinese group was more capable of “Uploading content like videos or photos to a website” than the Hispanics in the sample; however, the Hispanic group was more capable of “Adjusting privacy settings online,” “Creating my own personal website,” and “Recognizing a phishing request” than the Chinese group. The Chinese respondents tended to feel more capable uploading content online, even if this was categorized as one of the most basic digital skills. Furthermore, “Adjusting privacy settings,” “Creating my own website,” and “Recognizing phishing requests” were categorized as advanced digital literacy skills. Generally speaking, the Hispanic group was more capable in their internet use than the Chinese group in this sample, perhaps due again to age.

Table 2.2.2 Statistics of t-test between variables of utilization and race

Indicators of Capability (df=223)	Race	Mean	Std. Deviation	t
Uploading content like videos or photos to a website	Hispanic	1.109	.845	-2.241*
	Chinese	1.372	.824	
Blocking spam	Hispanic	1.014	.860	1.488
	Chinese	.8333	.874	
Adjusting privacy settings online	Hispanic	1.082	.848	.4.472***
	Chinese	.5641	.783	
Bookmarking a website or adding a website to my list of favorites	Hispanic	.912	.875	.631
	Chinese	.833	.903	
Comparing different sites to check the accuracy of information	Hispanic	1.082	.856	1.505
	Chinese	.897	.906	
Creating and managing my own personal profile on a social network site	Hispanic	1.020	.864	1.947
	Chinese	.782	.892	
Creating my own personal website	Hispanic	.939	.838	2.447*
	Chinese	.654	.819	
Recognizing a phishing request	Hispanic	.755	.849	3.271**
	Chinese	.397	.631	
Making my own content like videos, photos or music	Hispanic	1.054	.897	1.152
	Chinese	.9103	.885	
Downloading/streaming entertainment like e-books, movies, or music	Hispanic	1.415	.792	1.595
	Chinese	1.231	.882	

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Race and frequency of library visits

After eliminating non-respondents who hadn't responded to Question 20 ("How often do you come to the library?"), and I have ranked their frequency of library visits from "rarely" to "frequently" as 1 to 3) (n=23), there was no significant association between race and frequency of library visits. Thus, regardless of whether respondents were Hispanic or Chinese, their frequency of library visits had no statistical difference.

Table 2.3 Statistics of t-test between race and frequency of library visits

Group	N	Mean	Std. Deviation	t
Frequency of visiting library	Hispanic 147	2.28	.649	.866
	Chinese 79	2.34	.638	

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Race and engagement level with library

After eliminating non-respondents to Question 21 (“If you do come to the library sometimes what is the main activity you do at the library?”), and I have ranked their engagement level from 1 to 7) (n=15), a significant association between race and engagement level with the public library was found. The Chinese respondents were generally more active than the Hispanic respondents, indicating that they were likely to participate in more events or activities hosted by library.

Table 2.4 Statistics of t-test between race and activity level in library

Group		N	Mean	Std. Deviation	t
Engagement level with library	Hispanic	153	2.16	1.318	.009**
	Chinese	81	2.59	1.611	

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Employment status and utilization of internet

After eliminating non-respondents who hadn’t filled out Question 5 (“In the past six months, have you used the Internet at home for any of the following reasons?”) and Question 27 (“What is the employment status of the head of your household”) (n=48), the one-way ANOVA test found no significant association between employment status and utilization of internet. Thus, I investigated if there were any more nuanced associations between specific employment statuses and utilization of internet. According to the Chi-Square table, being retired is more related to choosing “No” on “Find or apply for a new job” (adjusted residual=4.0) and choosing “No” on “helping child with homework” (adjusted residual=5.4). However, being a student is more related to choosing “Yes” on “Completing forms for health/other services.” These results are likely due to retirees not needing to find jobs anymore, and thus less likely to use the internet to find a job.

They are also likely to live on their own, with no children who need help from the internet. Students, on the other hand, are more likely to access information, so they are more likely to complete forms online. Regardless of these differences, the overall utilization of internet in the sample has no statistically significant association with employment status.

Table 2.5.1 ANOVA table between utilization and employment status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.368	5	7.274	1.123	.349
Within Groups	1262.448	195	6.474		
Total	1298.816	200			

Table 2.5.2 Chi-Square table between utilization and employment status

Variables of Utilization	X ² (Chi-Square)
Find or apply a new job	19.447*
Learn job-related skills (such as certification)	3.096
Complete work for my current job	8.664
Read news/current events	6.383
Check product before buying	1.011
Watch something entertaining	3.409
Information about health	7.711
Get banking or financial information	10.568
Help child with schoolwork	35.754**
Connect with friends or family member	6.304
Get directions	2.750
Complete forms for health/other services	12.189*

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Employment status and capability of internet use

After eliminating non-respondents who hadn't filled out Question 7 ("Which of the following do you feel capable of doing?") and Question 27 ("What is the employment status of the head of your household") (n=50), the one-way ANOVA test shows a significant association between employment status and capability of internet use. According to the mean of each employment status, the most capable group was students, the least capable group was retirees. The

finding hints at the inverse correlation between age and capability of internet use, which is analyzed below. As most retirees are seniors, they are less likely to handle new technology than younger generations, while students are more likely to access the internet due to their higher levels of digital literacy.

Table 2.6.1 ANOVA table between capability and employment status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	387.916	5	77.583	2.534	.030*
Within Groups	5908.687	193	30.615		
Total	6296.603	198			

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Table 2.6.2 Descriptive statistic table between capability and employment status

	Group	N	Mean	Std. Deviation
Capability of internet use	Employed full-time	67	9.910	5.712
	Employed part-time	40	10.325	5.526
	Not employed, Not looking for work	8	10.375	5.579
	Not employed, looking for work	15	12.067	6.017
	Student	11	13.455	5.803
	Retired	58	8.190	5.135
	Total	199	9.869	5.639

Employment status and frequency of library visits

After eliminating non-respondents who hadn't filled out Question 20 ("How often do you come to the library?") and Question 27 ("What is the employment status of the head of your household") (n=152), the one-way ANOVA test showed a significant association between employment status and frequency of library visits. According to the mean of each employment

status, the group with the most frequent visits to the library was “Not employed, looking for work,” and the group with the least frequent visits was employed part-time (no one from “employed full-time” group filled out Question 20). This is likely a result of the group seeking a job online might need to visit public computers more than other groups since they may not be able to afford computers at home. They might also be interested in other library resources for increasing job skills or finding jobs.

Table 2.7.1 ANOVA table between employment status and frequency of library visits

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.141	5	1.828	4.516	.001**
Within Groups	39.267	97	.405		
Total	48.408	102			

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Table 2.7.2 Descriptive statistic table between employment status and frequency of library visits

	Group	N	Mean	Std. Deviation
Frequency of visiting library	Employed part-time	3	1.00	.000
	Not employed, Not looking for work	6	1.50	.548
	Not employed, looking for work	16	2.50	.632
	Student	12	2.25	.622
	Retired	60	2.28	.666
	Total	97	2.23	.689

Employment status and engagement level with the library

After eliminating non-respondents who hadn’t filled out Question 21 (“If you do come to the library sometimes what is the main activity you do at the library?”) and Question 27 (“What is the employment status of the head of your household”) (n=136), the one-way ANOVA test showed

a significant association between employment status and frequency of library visits. According to the mean of each employment status, the most active group was retirees, and the least active group was those employed part-time (with only one respondent marking “Employed full-time” for Question 27). Thus, retirees may have more time and are able to participate in more library activities compared to other groups.

Table 2.8.1 ANOVA table between employment status and engagement level with library

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39.484	6	6.581	4.517	.000***
Within Groups	163.155	112	1.457		
Total	202.639	118			

*Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.*

Table 2.8.2 Descriptive statistic table between employment status and engagement level with library

	Group	N	Mean	Std. Deviation
Engagement level with library	Employed full-time	1	.00	.
	Employed part-time	19	.95	.229
	Not employed, Not looking for work	7	1.14	.378
	Not employed, looking for work	12	1.67	.985
	Student	10	1.70	.823
	Retired	64	2.31	1.500
	Total	113	1.83	1.310

Correlation analysis

A bivariate correlation analysis was used to test the correlation between utilization and capability and continuous measures for age, educational level, number of children in the place of residence, number of internet users in the place of residence, frequency of library visits, and engagement level with the library.

Table 3. Bivariate correlation table between age, education, number of children 5-18, number of internet users at home and utilization/capability of internet use

Variable	1	2	3	4	5	6	7	8
1. Age		-.082	-.310**	-.463**	.026	.078	-.086	-.328**
2. Education			-.261**	.016	.402**	.484**	.197**	.200**
3. Number of children between 5-18 at the place of residence				-.122	.474**	.480**	-.044	-.055
4. Number of internet users at the place of residence					-.044	.032	.197**	.303**
5. Frequency of library visits						.562**	.236**	.014
6 Engagement level with library							.533**	.320**
7. Utilization of internet								.292**
8. Capability of internet use								

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Age

After eliminating non-respondents who hadn't filled out Question 5 or Question 24 ("In what year were you born") (n=55), there was no significant correlation between age and utilization of internet.

Second, after eliminating non-respondents who hadn't filled out Question 7 or Question 24 ("In what year were you born") (n=48), there was a significant negative correlation between age

and internet capabilities, indicating that the elderly are less capable in using the internet (see Table 3).

Educational level

Educational level from “Did not graduate high school” to “Post-college degree” was transformed into an index of educational level ranging from 1 to 6, with 1 indicating those who did not graduate high school and 6 indicating those with a post-college degree. After eliminating non-respondents who hadn’t filled out Question 5 or Question 29 (“What is the last grade or class you completed”) (n=146), there was a significant correlation between educational level and utilization of internet, indicating that if a respondent had a higher degree of education, he or she was likelier to use the internet for more various purposes (see Table 3).

Second, after eliminating non-respondents who hadn’t filled out Question 7 or Question 29 (“What is the last grade or class you completed”) (n=82), there was likewise a significant positive correlation between educational level and internet use capability, indicating that higher education levels were related to feeling more capable using the internet (see Table 3).

Number of children between 5-18 at the place of residence

After eliminating non-respondents who hadn’t filled out Question 5 Question 22-2 (“How many children between 5-18 live in your household?”) (n=104), there was no significant correlation between number of children between 5-18 at the place of residence and utilization of internet. This was contrary to most previous findings on the effect of having children in the household on internet use.

After eliminating non-respondents who hadn't filled out Question 7 or Question 22-2 ("How many children between 5-18 live in your household?") (n=11), there was no significant correlation between the number of children between 5-18 at the place of residence and capability of internet use. Thus, neither utilization nor capability of internet use was affected by the number of children between 5-18 at the place of residence.

Number of internet users at the place of residence

After eliminating non-respondents who hadn't filled out Question 5 or Question 30 ("How many people in your household use the Internet?"), or who had chosen "I don't know" on Question 30 (n=51), there was a significant positive correlation between number of internet users at the place of residence (the range is from 1 to above 5) and utilization of internet, indicating that if there were more people at their place of residence using the internet, respondents were more likely to use the internet for various purposes. This could be the result of incidental learning that occurs when a person is surrounded by other people using the internet (see Table 3).

Second, after eliminating non-respondents who hadn't filled out Question 7 or Question 30 ("How many people in your household use the Internet?"), or who chose "I don't know" on Question 30 (n=51), there was a significant positive correlation between number of internet users at the place of residence and capability of internet use, indicating that if there were more people at their place of residence using the internet, self-reported capability was higher. Thus, the number of internet users at the place of residence had significant correlation with both utilization and capability of internet (see Table 3).

Frequency of library visits

After eliminating non-respondents who hadn't filled out Question 5 or Question 20 ("How often do you come to the library") (n=120), there was a significant positive correlation between the frequency of library visits and the utilization scale score, which indicates that if a respondent visited the library more frequently, then s/he as more likely to have a higher score on the utilization scale. However, for the capability scale, there was no significant correlation between frequency of library visits and capability scale score (n=72). This indicates that even if a respondent visited the library more frequently, it didn't necessarily result in a higher score of internet-use capability (see Table 3).

For other factors, the frequency of library visits was significantly correlated with education level and number of children between 5-18 at home, indicating that if the respondent held a higher degree or had more children around, s/he was more likely to visit the library more often. However, there was no significant correlation between frequency of library visits and either age or number of internet users at home (see Table 3).

Engagement level with the library

After eliminating non-respondents who hadn't filled out Question 7 or Question 21 ("If you do come to the library sometimes what is the main activity you do at the library?") (n=109), there was a significant positive correlation between the engagement level with the library and the utilization scale score, indicating that if the respondent participated in more library activities, then s/he was more likely to gain a higher score on the utilization scale. Also, for the capability scale, a positive significant correlation also existed between engagement level with the library and the

capability scale score (n=49), indicating that if the respondent participated in more library activities, then s/he had higher internet use capabilities. (see Table 3).

Other factors revealed that the engagement level with the library also had significant correlation with education level and number of children between 5-18 at home, indicating that if the respondent held a higher degree or had more kids around, s/he was more likely to have high internet capabilities. However, there was no significant correlation between frequency of library visits and either age or number of internet users at home, but there was a significant positive correlation between frequency of library visits and engagement level with the library, indicating that, statistically, if the respondent visited the library more frequently, then s/he tended to be more engaged in library activities or events (see Table 3).

Regression analysis

The correlation analysis above has pointed out the relationship between some factors and utilization and capability of internet use. For the scale of internet utilization, race, educational level, and number of internet users at home all had significant relationships. For the scale of internet capability, the same variables, as well as age, all had significant relationships. A linear regression analyzes all variables simultaneously for both utilization and capability, aiming at computing a specific equation with related coefficients and at understanding the joint and separate effects of certain variables.

Utilization of internet

First, I eliminated non-respondents who hadn't filled out Question 5, 29, 30, or who had chosen "I don't know" on Question 30 (n=68). Then I normalized the scale of utilization of internet, and conducted a linear regression.¹⁷ After dummifying the dichotomous variable of race in the regression analysis, which either only contained race as the dependent variable or added other factors in the analysis, race was not significantly associated with the utilization score. Even though race had a significant relation to utilization of internet tested by an independent sample t-test, there was no significant relation between race and utilization of internet in the linear regression model (see Table 4.1.1). Thus, race cannot be regarded as one of the predictors in the equation. Meanwhile, same result happened to age too. In the regression analysis with age as the single variable, age was not associated significantly with utilization score either (see Table 4.1.2). In other words, for predicting the utilization score of internet, compared to other variables, neither race nor age was relevant. Thus, for the equation predicting the score of utilization of internet, the predictor was educational level and number of internet users at the place of residence. In sum, 27.3% (R^2) of total variation in the dependent variable could be explained. Furthermore, $F=28.012$, $p<.001$, which indicates that, overall, the regression model statistically significantly predicts the outcome variable (see Table 4.1.3). According to the coefficient table, the mean utilization score of internet use for respondents in the sample can be predicted using the following equation:

¹⁷ The utilization scores were normalized based on Templeton, G.F.'s "A Two-Step Approach for Transforming Continuous Variables to Normal: Implications and Recommendations for IS Research" in *Communications of the AIS*, Vol. 28, Article 4. First, I use fractional rank to rank the utilization scores in SPSS. Second, I compute the utilization score of each respondent into a normalized score, by Inverse Distribution Function (Normal) with the fractional rank of original score, mean and standard deviation.

$$\text{Utilization score of internet use} = .127 * \text{Educational level} + .964 * \text{Number of internet users} + 2.209$$

(Educational level ranks from 1 to 6; number of internet users ranks from 1 to 5)

Table 4.1.1 Linear regression analysis table of utilization score of internet use with race

Dependent variable			B	SE	β	F	R ² (%)
Utilization of internet	Model 1	(Constant)	4.282	.311			
		Race	.732	.383	.161	3.662	2.6%
	Model 2	(Constant)	2.533	.467			
		Race	.427	.356	.093		
		Education	.733	.115	.481***	14.927***	25.3%
		Number of internet users	.112	.122	.071		

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Table 4.1.2 Linear regression analysis table of utilization score of internet use with age

Dependent variable			B	SE	β	F	R ² (%)
Utilization of internet	Model 1	(Constant)	4.714	.493			
		Age	-.012	.009	-.090	1.636	0.8%

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Table 4.1.3 Linear regression analysis table of utilization score of internet use without race and age

Dependent variable			B	SE	β	F	R ² (%)
Utilization of internet	Model 1	(Constant)	3.037	.305			
		Education	.754	.113	.494***	44.118***	24.4%
	Model 2	(Constant)	2.605	.303			
		Number of internet users	.943	.126	.504	55.947***	25.4%
	Model 3	(Constant)	2.209	.410			
		Education	.127	.092	.096*	28.012***	
		Number of internet users	.964	.132	.510***		27.3%

Note: *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Capability of internet use

I eliminated non-respondents who hadn't filled out Question 7, 29, and 30, or who had chosen "I don't know" on Question 30 (n=70). Then I normalized the scale of capability of internet use, and conducted the linear regression.¹⁸ After dummifying the variable of race in the regression analysis, which either only contained race as the dependent variable or added other factors in the analysis, race was not significantly associated with the utilization score. Race had a significant relation with capability of internet use tested by an independent t-test. If race was the only variable in the regression model, race was a significant factor; only 2.2% of the total variation could be explained. However, there was no significant relation between race and capability of internet use in the linear regression model when age, education, and number of internet users were involved (see Table 4.2.1). Thus, race could not be regarded as one of the significant predictors in the equation. In other words, when predicting the capability score of internet use, race was not relevant. Thus, for the equation predicting the score of utilization of internet, the predictors were age, educational level, and number of internet user at the place of residence. In sum, 14.7% (R^2) of total variation in the dependent variable could be explained. Furthermore, the equation was significant ($F=9.495$, $p<.001$), indicating that the regression model statistically significantly predicted the outcome variable (see Table 4.2.2). According to the coefficient table, we can predict the mean capability score of internet use for respondents in the sample by using the following equation:

¹⁸ The way I normalize the utilization scores is based on Templeton, G.F's "A Two-Step Approach for Transforming Continuous Variables to Normal: Implications and Recommendations for IS Research" in *Communications of the AIS*, Vol. 28, Article 4. First, I use "fractional rank" to rank the capability scores in SPSS. Second, I compute the capability score of each respondent into a normalized score, by Inverse Distribution Function (Normal) with the fractional rank of original score, mean and standard deviation.

Capability score of internet use=
 $-.067*Age + .472*Educational\ level + .739*Number\ of\ internet\ users + 10.936$
(Age is above 18, education level ranks from 1 to 6; number of internet users ranks from 1 to 5)

Table 4.2.1 Linear regression analysis table of capability score of internet uses

Dependent variable			B	SE	β	F	R ² (%)
Capability of internet use	Model 1	(Constant)	9.342	.610			
		Race	1.588	.747	.149*	4.519*	2.2%
	Model 2	(Constant)	12.425	2.050			
		Race	-.902	.832	-.084		
		Age	-.078	.026	-.257**		
		Education	.419	.217	.138	7.596***	15.3%
		Number of internet users	.658	.290	.182*		

*Note: *: p < .05; **: p < .01; ***: p < .001.*

Table 4.2 Linear regression analysis table of capability score of internet uses

Dependent variable			B	SE	β	F	R ² (%)
Capability of internet use	Model 1	(Constant)	15.273	1.084			
		Age	-.094	.021	-.311	19.558***	9.7%
	Model 2	(Constant)	9.028	.737			
		Education	.553	.228	.177	5.879*	3.1%
	Model 3	(Constant)	7.605	.704			
		Number of internet users	1.128	.249	.306	20.509***	9.3%
		(Constant)	10.936	1.909			
	Model 4	Age	-.067	.025	-.215**		
		Education	.472	.223	.153*	9.495***	14.7%
		Number of internet users	.739	.321	.185*		

*Note: *: p < .05; **: p < .01; ***: p < .001.*

Discussion

From the data analyzed in the previous section, we find that:

- (1) H1 is rejected as race doesn't matter for either the utilization or capability scores in the regression analysis.
- (2) H2 is partially accepted as age had a negative correlation with the capability score but not the utilization score.
- (3) H3 is partially accepted as employment status had a significant association with the capability score but not the utilization score.
- (4) H4 is accepted as education level had a significant positive correlation with both the utilization and capability score.
- (5) H5 is rejected as the number of children at 5-18 at home had no significant association with either the utilization or capability scores.
- (6) H6 is accepted as the number of internet users in the household was positively correlated with both the utilization and capability scores.
- (7) H7 is partially accepted as the frequency of the public library visits was positively correlated with the utilization score but not the capability score.
- (8) H8 is accepted as the level of activities in which one engages at the public library was positively correlated with both the utilization and capability scores.

These findings are related to my major research questions posed at the outset: the first question explores differences between the two subject ethnic/racial groups; the second looks at factors that affect these communities' internet use and capabilities; and the third explores the role

of the library in the groups' internet use patterns. Diving more deeply into the first research question, Hispanics generally rate higher in terms of both capabilities and utilization than do their Chinese counterparts. According to the independent sample t-test, race had a significant association with both internet utilization and capability, which reveals why the Hispanic community had higher scores than the Chinese community. However, this could be primarily related to the age distribution of these two ethnic groups, in which 39.4% of Chinese respondents were 65 years or older, compared with only 8.1% of the Hispanic respondents being in the same age group. Also in the regression analysis, race is not a significant predictor for either utilization of and capability scale (see Table 4.1.1 and 4.2.1). Age has a significant negative impact on internet use: as people age, they tend to be less internet-savvy, according to a Pew Research report on Americans' internet use; that research demonstrated that 41% of people aged 65 and older aren't online (Pew Research Center, 2013). Meanwhile, the regression analysis also showed that age is a significant predictor for the capability of internet use (See Table 4.2).

Race was shown to influence utilization and capability scores of internet use, but its effects were limited. Even though there were significant associations between race and internet use on both scales based on the data analysis (see Table 2.1.1 and 2.2.1) and the regression analysis, when race is entered alongside other important variables, its significance vanishes for either capabilities or uses. When age, education, etc., were factored in, race had no more significant association with either scores. This suggests that there are different patterns of utilization and capabilities when comparing Chinese and Hispanic groups. The Chi-Square tables (see Table 2.1.2 and 2.2.2) show different patterns of internet use existed between Chinese and Hispanic respondents. On the utilization scale of internet, Hispanics respondents were more apt to use computers and the internet to "Find or apply for a new job," "Check a product before buying," "Get banking or financial

information,” and “Help child with schoolwork” than Chinese respondents. However, the Chinese community was more likely to use the internet to connect with friends or family members. On the capability scale of internet use, Hispanics were more capable of “Adjusting privacy settings online,” “Creating my own personal website,” and “Recognizing a phishing request,” while Chinese were more capable of “Uploading content like videos or photos to a website.”

In terms of the second research question, which examined factors beyond race and their influence on internet use and capabilities, age, education, and the number of internet users in the household mattered significantly. Employment status appears to affect the capability scale of internet use, but not the utilization scale; this may suggest that working people have enough exposure at work to gain some expertise. The number of children in the household had no impact on either scale. Age had no significant correlation with the utilization scale of internet in this dataset, but it had a negative correlation ($r = -.328$) with the capability scale of internet use, which means older people had reduced internet capabilities. Educational level was both positively correlated with utilization and capability of internet use ($r = .197$ and $.200$), reinforcing many other findings regarding the role of education. It indicates that higher educational level was related to high scores on both scales for this dataset. Both findings echoed the Pew Research Center’s 2013 findings (Zickur, 2013).

The number of internet users in the household had positive correlations with both scales ($r = .197$ and $.303$), indicating that if there were more internet users in the respondent’s residence, s/he gained a higher score on both the utilization and capability scale. This may indicate that incidental or informal learning takes place when there are multiple users in the same place since they can ask each other questions and observe certain internet behaviors. As Kerba (2000) defines it, “Incidental learning is unintentional or unplanned learning that results from other activities. It

occurs often in the workplace and when using computers, in the process of completing tasks” (p. 3-4). The UNESCO Institute for Lifelong Learning chooses to use “information learning” in their 2015 report, defined as learning that is “not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification; informal learning may be intentional but in most cases it is non-intentional (or “incidental”/random),” and “results from daily life activities related to work, family or leisure” (Yang, 2015, p. 9). Thus, when there are more internet users at home, each family member might learn from each other, which could possibly lead to a wider range of online activities each can participate in and the development of better online skills.

Generally, there was no significant associations between employment status and the utilization scale of internet (see Table 2.5.1). However, according to the Chi-Square Table (see Table 2.5.2), retirees tended to choose “No” on “Find or apply a new job” and “Helping child with homework.” This was likely due to retirees not needing a new job any more and not having children in his/her household because their children have grown up. Students tended to choose “Yes” on “Completing forms for health/other services.” For the capability scale, as addressed earlier, students typically possess the digital skills necessary to access information and are more technologically savvy. Thus, they are more likely to fulfill their daily needs online. The self-identified students had the highest score, which was likely related to their age and their access to technology. The score of retirees was lowest, which might also be related to their age and lack of exposure to the internet when they were younger. Because of the effects of aging, people are less likely to be adept at a new skill, which might lead to their lack of confidence in developing new technology skills. According to Table 2.6.2, the capability score of the group of “Not employed, looking for work” was the second highest, which was higher than the group of “Employed full-

time” and “Employed part-time.” This could be explained by their different relationships to the job market: those who are unemployed may need to improve their digital skills in order to meet employers’ demands unlike those who are employed. However, there was not enough evidence to draw that conclusion.

The number of children between 5-18 at the place of residence had no significant correlation with either utilization or capability of internet use; it was not a significant factor in the regression analysis either. According to the Child Trends Data Bank report (2015), almost 6 out of 10 kids, ages 3 to 17 (57%), used the internet at home, and 79% had a computer at home. Children may be an important motivating factor in the development of their parents’ technology skills, be it because of their homework or for personal development, and in general national statistics demonstrate a positive relationship between home broadband and having children in the home. Among the respondents for this study, the correlation was not significant. This could be due to various reasons, particularly the small sample size of Chinese respondents with few children living in the household.

When it comes to the potential role of the library, both Chinese and Hispanic community members visit the local branch of their public library with similar frequency. However, Chinese respondents were more active at the library, i.e., engaging in more library-sponsored activities. There was no significant association between race and frequency of library visits, which means that both Chinese and Hispanic respondents had similar library visit patterns (see Table 2.3). Retirees tended to visit the library more, which will be more fully addressed shortly. Among the Chinese respondents, 39.4% were 65+ years old. A few Chinese respondents mentioned this in the last open-ended question on the survey – they came to this specific branch of the public library mainly because there were more Chinese books and some of the staff there could assist them in

Chinese. Thus, the results regarding this group were likely highly influenced by the age distribution. This means they spend more time at the library and consequently engage with more library resources.

Predictably, education level was significantly associated with the frequency of public library visits ($r=.402$), which also was correlated to the number of children between 5-18 at home ($r=.474$). The frequency of public library visits also was significantly correlated with the utilization score on internet use ($r=.236$) but not capability. As revealed in Table 2.7.1, significant associations were found between educational level and frequency of library visits. Compared to all other respondents in the sample, the group identifying itself as “Not employed but looking for a job” scored highest as the most frequent visitor; retirees ranked as the second most frequent visitors (see Table 2.7.2). According to Table 3, the frequency of public library visits was significantly correlated to the number of children between 5-18 at home, which indicates that children could motivate patrons to visit libraries, perhaps because the public library often provides children with an ideal space for education and recreation. Additionally, for respondents who visited the library more frequently, they tended to have a higher utilization score, which implies an ability to engage in a wider range of online activities. This didn’t guarantee a higher score on the capability scale, however; even though patrons might visit the library more often, those visits might not have any impact on their internet capability.

Education level was significantly associated with respondents’ level of engagement with the library ($r=.484$). The latter in turn was correlated with the number of children between 5-18 at home ($r=.480$). Additionally, the engagement level was significantly correlated with both utilization and capability scores of internet use ($r=.533$ and $.320$). Table 2.8.1 shows that education level was significantly associated with the level of engagement with the library. Specifically,

retirees tended to be more engaged, which means they were likely to take part in more events or activities at the library—likely due to their increased free time. The public library would be an ideal place to read newspapers/magazines/books, use public computers, or socialize with friends. On the other hand, the employed group scored the lowest on the scale, presumably because they didn't have much time to spend at the library. According to Table 3, the engagement level with the library was also significantly correlated with the number of children between 5-18 at home, indicating that children could be a motivating factor for patrons to participate more at the library (as noted earlier). Ultimately, as respondents participated more in library events or activities, they tended to score higher on both the utilization and capability scale, indicating a wider range of online activities in which they could participate and a higher level of technological ability .

Conclusion and Local Library Perspectives

One of the greatest limitations of this research was the small sample size of the Chinese community, which was only 35.4% of the whole sample (88 out of 249). This highly influences the representativeness of the sample of Chinese sample's internet use and increases the standard error of various results, limiting confidence in the findings. Second, since age was a significant factor for both scales, the age distribution of the Chinese respondents seems to have affected scores on both scales – 39.4% of the Chinese respondents were above 65 years old. Third, not all respondents filled out the entire survey; most chose to answer the questions with which they were more familiar. Particularly among the Chinese community, they may have chosen not to answer those questions that contained some terms with which they were unfamiliar or didn't understand (such as “streaming services” translated in Chinese). This may have affected the consistency of the survey results while causing a burden for data cleaning. Lastly, the original goal of this research was to investigate the relationship between immigrants' internet use and their acculturation patterns, particularly with respect to the library. However, since this was a secondary dataset lacking direct factors examining the respondents' acculturation level, like their feelings of “belonging” towards local community, etc., that broader investigation could not be undertaken. It was also difficult to distinguish the first generation or 1.5 generation of immigrants and the second generation of immigrants based on the questionnaire.

Connected to the theorization of digital divide, the role the public library is indeed answering the “HOW” question as Hilbert (2011) categorized in the previous literature. The barriers as Van Dijk (1999) identified (the barrier of mental access, material access, skill access, usage access) were mainly view separately by other scholars (Van Dijk, Hacker, 2003). Meanwhile,

from scholars to policy-makers, different reports and researches have provided specific protocols and practices for these four kinds of barriers in the concept of access. However, it is time for all of us to take a broader perspective to review barriers in access as a whole. Because from the barrier of mental and material to skill and usage access, they are intertwined and influenced by each other within interactivity, which cannot be totally divided as four sub-categories. Here, the role of the public library could actually opt-in, while providing the disadvantaged communities with a comprehensive toolkit dealing with the issue of barriers in internet access wholly. For low-income immigrant families, the public library could be a very important site, providing free and open internet, something that may not be affordable at home via broadband or cell phone service. This is relevant since previous literature and data have already shown that internet use could play a positive role in promoting immigrants' acculturation level (Rao, 1998; Mitra, 2000; Ball-Rokeach, Kim, & Matei, 2001; Aldridge, 2003; Matei & Ball-Rokeach, 2003; Parham, 2004; Torres, 2005; Navarrete & Huerta, 2006; Chen, 2010). In this paper, I analyzed data that may indicate how the public library can function as a community tool for enhancing immigrants' internet use based on their internet use pattern. As Strover (2015) states, "[A] long range view to resolve the divide would recognize libraries are primary sites for providing both access and training and assistance... [libraries] have done an admirable job in helping people to use the internet. That role should be supported financially" (p. 119). In addition to financial support on an institutional level, other appropriate strategies that could meet local demand should recognize public libraries in order to promote both utilization and capability of internet use and narrow the digital divide. Here are some recommendations:

1. Ensure the public library's positive role in enhancing internet use and narrowing the digital divide.

Public library stakeholders, from policy-makers to local branch librarians, need to be aware that the public library contributes to low-income and less technologically-savvy ethnic communities, strengthening community members' utilization range of internet use and improving their internet capabilities. As my data analysis has addressed, the frequency of the public library visits had no significant association with internet utilization, but it was significantly associated with the scores on the internet capability scale. Thus, as patrons visit the public library more frequently, they may not necessarily have a wider range of online activities with which they are able to participate, but they may increase their internet capabilities. Engagement level, furthermore, was significantly associated with both scores on the utilization and capability scales. As patrons engaged in more public library activities, they were more likely to receive a higher score on either scale. Therefore, these results emphasize how the public library could be utilized for enhancing internet use and narrowing the digital divide in disadvantaged ethnic communities.

2. Be aware of the diverse patterns of internet use for different ethnic communities.

While acknowledging the role of the public library in promoting immigrants' internet use, the public library should also acknowledge different group's unique internet use. Even though race/ethnicity didn't play a significant role in my data analysis, this may have been due to my sample age distribution. Regardless, a library's programs and events should meet local needs rather than treating various ethnic communities homogenously, with identical interests. In my dataset, a large number of Chinese respondents were seniors over the age of 65 who were more likely to use the internet for connecting with family and friends, while Hispanic respondents were using the

internet for job seeking and daily needs. Thus, if the public library is to provide training programs or classes, seniors may be interested in learning skills about social media while other groups may want to learn skills related to their careers. Chinese respondents, furthermore, were also more capable in basic skills like uploading content, while Hispanic respondents were more capable of advanced skills including adjusting their privacy protection and even creating their own digital products online. Therefore, library curriculum aimed at Chinese patrons might target advanced skills while programs for Hispanic patrons, who are more tech-savvy, might focus on even more advanced skill sets, such as Photoshop, video editing, etc.

3. Use localized methods to promote internet use among patrons.

Beyond matching content needs, other methods to promote internet use should meet local needs. For example, Chinese respondents were more likely to read newspapers and magazines (and also were more likely to subscribe to newspapers at home) than Hispanic respondents, possibly because of the Chinese sample age distribution (68.9% are above 50 years old). Thus, hardcopy versions of manuals or guides, which contain every step of a specific skill, such as uploading content or sending e-mails, could further support patrons' learning after a computer or internet class. Additionally, language barriers also matter. Many elderly Chinese respondents were unable to read or write in English—even at a daily communication level. As mentioned earlier, these patrons visit the local branch for resources and services in Chinese – and perhaps for meeting up with each other. Thus, a hands-on teaching approach in the home language may be more suitable for this population. Lastly, even though the number of children between 5-18 had no direct impact on either the utilization or capability scale score, it is important to still acknowledge children's influence on the frequency of library visits and the engagement level with the library. Local

branches of the public libraries, therefore, should launch events or activities for children in these communities. While it may not have an immediate or direct impact on the patrons' utilization or capability scores, it may lead to incidental learning as patrons visit the library more frequently or participate in events hosted by their public library. For example, some of the patrons in this study heard about the Hotspot Program run by the New York Public Library by accident when they visited their library.

In sum, throughout this thesis, I distinguished diverse patterns of internet use for two ethnic communities and tested factors that had significant influence on their utilization and capability scale of internet use scores. I also analyzed the library's role in local ethnic communities within today's digital era of the information society. Based on my analysis of internet-use patterns and characteristics, I also offered suggestions for how public libraries could enhance low-income immigrants' internet use and narrow the digital divide. This study examined various factors of internet use, particularly that of race, while using two specific racial/ethnic communities as comparative cases. Such an approach highlights the public library's function as a local agency for ethnic communities' acculturation. In practical terms, this project reinforces the importance of libraries developing connections within immigrant communities and providing them with access to the internet, and formulates a model that libraries can follow to better serve other ethnic groups and areas. Finally, it provides libraries with specific micro-level policy suggestions to better meet local needs, especially for those frontline librarians and staff directly working with patrons.

Appendix



SURVEY

Legal Disclaimer

By participating in this survey for The New York Public Library, I hereby give my irrevocable release, permission and consent to the Library, its funders and other third parties selected by the Library to use, publish and license, in any manner whatsoever, my survey responses. By providing my personal information below, I consent to the Library contacting me about my survey responses. I understand that I will receive no compensation for the use of my survey responses.

I certify that I am at least 18 years of age and completing this survey constitutes my informed consent.

**Thank you! By completing this survey
you are helping the library. We
appreciate it.**

Library where you are checking in your device

Library Hotspot – Post-Program User Survey

Please circle the responses (or put a line through the circles) that best reflect your experiences.

1. In the week before your service ended, about **how often did you use the Internet** through the Hotspot device? (Circle the best response)

1 hour a week or less	A few hours a week	An hour a day	2 – 3 hours a day	3 hours a day or more
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2. Who used the Hotspot in your household? (Check all that apply)

Me	<input type="radio"/>	Friends	<input type="radio"/>
My child or children	<input type="radio"/>	Someone else	<input type="radio"/>
Another adult family member	<input type="radio"/>		

3. Where did you use the Hotspot? (Check all that apply)

At home	<input type="radio"/>	At work	<input type="radio"/>
Traveling around the City	<input type="radio"/>	Other	<input type="radio"/>
In a public place like a coffeeshop	<input type="radio"/>		

4. **Before** you got the Hotspot, how did you **usually** access the Internet? (Check all that apply)

On my phone	<input type="radio"/>
At a library	<input type="radio"/>
At a friend or family member's home	<input type="radio"/>
At a store providing free access like a coffee shop	<input type="radio"/>
At school	<input type="radio"/>
At work	<input type="radio"/>
At another public place (community center, etc.)	<input type="radio"/>
I did not access the Internet regularly before I got the Hotspot	<input type="radio"/>
Other	<input type="radio"/>

5. In the **past six months**, have you used the Internet at home for any of the following reasons? Please check all that apply.

Find or apply for a new job	<input type="radio"/>	Get information about health	<input type="radio"/>
Learn job-related skills (such as certification)	<input type="radio"/>	Get banking or financial information	<input type="radio"/>
Complete work for my current job	<input type="radio"/>	Help a child with his/her schoolwork	<input type="radio"/>
Read news / current events	<input type="radio"/>	Connect with friends or family (Skype)	<input type="radio"/>
Check out a product or service before buying	<input type="radio"/>	Get directions (e.g. Google Maps)	
Watch something entertaining	<input type="radio"/>	Complete forms for health/other services	<input type="radio"/>

6. In the past **three years** have you **ever** had Internet service **at home, aside from the library Hotspot?**

Yes ☐ No ☐

7. Which of the following do you feel **capable** of doing? **(Check one for each row)**

	Agree	Neutral	Disagree
Uploading content like videos or photos to a website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blocking Spam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjusting privacy settings online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bookmarking a website or adding a website to my list of favorites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comparing different sites to check the accuracy of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating & managing my own personal profile on a social network site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating my own personal website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recognizing a phishing request	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making my own content like videos, photos, or music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Downloading/streaming entertainment like e-books, movies, or music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Did having the **Hotspot** lead you to spend **more** or **less** time on the following activities?

Activity	Less Time	Same Amount of Time	More Time
Searching for health information online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using my phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reading print items (newspapers, magazines)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping up with what is happening locally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watching online videos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing schoolwork/training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coming into the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Searching for jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finding city and community information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working online with my child (if you have kids)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traveling somewhere to get information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staying in touch with family members & friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning new things to improve my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emailing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gaming online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using apps I downloaded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using social media like Facebook or Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Checking on school activities related to my child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. **How much** did you use the Hotspot device? (Choose **one**)

A lot –usually beyond the point it slows down	<input type="radio"/>
Often, up to the point it slows down	<input type="radio"/>
Occasionally	<input type="radio"/>
Not very often	<input type="radio"/>

10. Did having the Hotspot device **help** with the following (**agree or disagree**)?

	Agree	Neutral	Disagree
Stay in touch with family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop new Internet skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apply for jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Build computer skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research something I would buy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seek health information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Find out about city services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keep up with work duties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keep track of my money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Find transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access the library online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay bills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Take an online course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. **How likely** is it that you will **purchase some kind of Internet service** at home in the next six months?

Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Overall, **how easy** was it to use the Hotspot?

Very Difficult	Not Easy	Neutral	Easy	Very Easy
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Overall, **how satisfied** are you with the Library Hotspot Program?

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Here are some things people said they used to **help them with the Internet**. Which of these do you use to help with the Internet? Which would you ***like*** to use?

	Already Use	Would Like to Use (Check if yes)
Books or magazines	<input type="radio"/>	<input type="radio"/>
Classes at a local school	<input type="radio"/>	<input type="radio"/>
A family member under 18	<input type="radio"/>	<input type="radio"/>
Classes at the library	<input type="radio"/>	<input type="radio"/>
Classes at a local community or job center	<input type="radio"/>	<input type="radio"/>
An online source	<input type="radio"/>	<input type="radio"/>
An adult family member	<input type="radio"/>	<input type="radio"/>
Friends	<input type="radio"/>	<input type="radio"/>
I know enough that I don't need any help	<input type="radio"/>	<input type="radio"/>
Don't know	<input type="radio"/>	<input type="radio"/>

15. On a scale of 1-10 how likely is it that you would **recommend the HotSpot** lending program to a friend or colleague? **1 = very unlikely, 10 = extremely likely**

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. On a scale of 1-10 how likely is it that you would **recommend the New York Public Library** to a friend or colleague? **1 = very unlikely, 10 = extremely likely**

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. How often did you use the following devices with your Hotspot?

	Not at all	Occasionally	Sometimes	Often	Very Frequently	Don't Have
Mobile phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desktop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Streaming device (Chromecast, or Roku)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-reader (nook, kindle)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. **Before** the Library Hotspot Program, did you have any of these devices at home? (Check all that apply)

Desktop computer	Laptop computer	Tablet (iPad, Samsung)	E-Reader (Kindle, Amazon)	Streaming device (Chromecast, Roku, AppleTV)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Before participating in the Library Hotspot Program, which of these services did you pay for?

Cell phone without any data (only calls/texts)	<input type="radio"/>
Cell phone with data plan	<input type="radio"/>
Landline telephone	<input type="radio"/>
Cable Television	<input type="radio"/>
Newspaper or magazine subscription	<input type="radio"/>
Gym Membership	<input type="radio"/>

20. How often do you come to the library? ☐ rarely ☐ sometimes ☐ frequently

21. If you do come to the library sometimes what is the **main activity** you do at the library?

Use the computers	Look up things	Attend a class	Bring my child to a class	Read newspapers, magazines	Check out media (DVDs, tapes)	Check out books
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please help us by answering a few questions about yourself.

22. How many people **live in your place of residence now?**

	None	One	Two	Three	Four	More than Four
Adults , including yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Children between 5-18?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. What is your race or ethnicity?

African American, Africana, Black	South Asian, Indian, etc.	East Asian	Caucasian, White	Hispanic, Latino	American Indian, Aleut, Eskimo	Mixed	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. In what **year** were you born?

25. What **borough** do you live in?

26. Do you use a pre-paid cell phone?

Yes____

No____

I don't know _____

27. What is the employment status of the head of your household?

- Employed full-time ☐
- Employed part-time ☐
- Not employed, NOT looking for work ☐
- Not employed, looking for work ☐
- Student ☐
- Intern ☐
- Retired ☐

28. What is your annual household income?

- Under \$25,000 ☐
- \$25,000 - \$49,999 ☐
- \$50,000 - \$74,999 ☐
- \$75,000 - \$99,999 ☐
- \$100,000 - \$124,999 ☐
- \$125,000 - \$149,999 ☐
- \$150,000 or more ☐
- Prefer not to answer ☐

29. What is the last grade or class you completed?

- Did not graduate high school ☐
- High School, GED, or equivalent ☐
- Technical, or vocational school ☐
- Some college or Associates degree ☐
- College Degree ☐
- Post College degree ☐

30. How many people in your household use the Internet?

- 1 ☐
- 2 ☐
- 3 ☐
- 4 ☐
- 5 or more ☐
- I don't know ☐

31. What language do you speak at home?

- English ☐
- Spanish ☐
- Chinese ☐
- Something else (please write below): ☐

32. What is your sex?

- Male ☐
- Female ☐

Please use the space below to tell us what you would like to be changed or improved about the Library HotSpot Program.

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