Ndumu, A. (2020). Disrupting Digital Divide Narratives: Exploring the US Black Diasporic Immigrant Context. *Open Information Science*, *4*(1), 75-84.

Title: Disrupting Digital Divide Narratives: Exploring the U.S. Black Diasporic Immigrant Context

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Abstract: The purpose of this study is to probe biased library and information science (LIS) presumptions of digital divides among U.S. immigrants. The stance of the foreign-born as "digital immigrants" departs from migration and population research which hold that gaps in immigrant Internet and technology access are rapidly closing, even when accounting for immigrant type. The research is based on analysis of the 2016 U.S. Census Bureau American Community Survey data. Black immigrant households' ICT device and Internet access were determined and then compared to those of the general population. Findings suggest that Black immigrant households primarily access the Internet through smartphone and laptop devices along with mobile and at-home hi-speed Internet plans. When compared to the general population, Black immigrant households demonstrate significantly greater smartphone access, and they maintain comparable levels of hi-speed Internet and computer/laptop device access. This study adds to a growing body of research on the narrowing digital divide gap among U.S. immigrants. Immigrants rely on the Internet to transition and integrate into U.S. society.

Paper Type: Research Paper

1 Introduction

Outreach to immigrant communities is a historic and celebrated aspect of the library profession. However, notions of immigrants as universally information impoverished or digitally divided are uncritically accepted and all but canonized. Without reliable knowledge of the role of technology in the lives of immigrants, LIS approaches will continue to be limited and the field will never fully promote social inclusion (Caidi, Allard & Quirke, 2010). This study interrogates the typecast of the foreign-born being universally technologically dispossessed.

Black immigrants were selected as the study group precisely because this community remains understudied. Here, a Black immigrant is defined as a foreign-born adult of mixed or single Black race (regardless of ethnicity) who permanently resides in the U.S. This operationalization aligns with that of the United States Census Bureau. 2010 Census estimates and forecasts suggested that there were between 3.8 and 5.2 million Black immigrants in the U.S. Most are of African, Afro-Caribbean and Afro-Latinx heritage. As with other groups, Black immigrants can be refugees, asylees, naturalized citizens, as well as documented and undocumented permanent residents. Despite linguistic and cultural differences, the U.S. Black immigrant community is largely comprised of adults over the age of 18 (93%), who speak English proficiently (74%), and are often highly-skilled or degreed; 26 percent hold undergraduate degrees, or a few points lower than the national average, and 10 percent hold graduate degrees, which is on par with the national average (Anderson, 2015a; 2015b; Anderson & Lopez, 2016; Capps, McCabe & Fix, Thomas, 2012). Although this segment of the population has seen a fivefold increase since 1980, Black immigrants are essentially erased from LIS discourse.

2 Review of relevant LIS literature on immigrants and digital access

The library and information science (LIS) field has demonstrated a problematic tradition of identifying immigrants as a fatally uninformed lot. Early American Library Association leaders believed their mission was to "let in light where darkness prevails through ignorance" for "librarians have level judgments, undeceived of the failings of alien newcomers, but they also understand their possibilities" (Carr, 1916, p. 149). These prejudices were later engrained through late-20th century research on information poverty—the seminal work being Childers and Posts' (1975) The information poor in America which described marginalized groups such as immigrants as "not predisposed as the general population to alter the undesirable conditions of their lives, or to see information as an instrument in their salvation" (p. 80). Similar to current nativist and xenophobic rhetoric, Childers and Post described Mexican immigrants, in particular, as those who are "isolated from information that sustains the dominant society," because "a number of characteristics magnify their isolation. They are proud of their culture, and especially tenacious in their language [...] they distrust or dislike Anglo institutions, such as schools, medical clinics, public housing, etc." (p. 79). Childers and Post have influenced a long line of LIS scholarship, most notably Elfreda Chatman's theory of information poverty (Chatman & Pendleton, 1995; Chatman, 1996a; 1996b).

Linkages between immigration information behavior, information poverty, and the digital divide are commonplace in LIS (Lloyd, Lipu, Kennan, 2016; Koo, 2012; 2016; Thompson, 2006;

Thompson & Afzal, 2011; Walker, 2012). Take, for instance, Shen's (2016) blanket assertion that urban immigrants are not only information poor but illiterate, low-income, and unemployed. Shen fails to operationalize "urban immigrants," but does not refrain from characterizing them as minoritized, deprived, or otherwise culturally inferior. They posit that, "as one of the key information poor groups, urban immigrants are affected by the lack of English proficiency, education, technology skills, and equal access to information" (p. 9), thus making the ethnoracial undertones decipherable. Such sweeping views of immigrants' information capacities discount the tremendous range in immigrant types, origins, and personal narratives; not all immigrants are forcefully displaced, non-English speakers, uneducated, low-skilled nor even people of color.

Notwithstanding, the LIS milieu continues to mirror the racist foundations of U.S. immigration policy where belonging—and, thereby, information norms—are understood from the vantage point of a dominant societal standard (Ndumu, 2020). By the time that the World Wide Web was introduced, these assimilationist and essentialist views toward immigrants were long fortified in the field (Ndumu, 2020). To be sure, varied research supports that during the period of 1997-2003, immigrants were significantly less likely to have at-home Internet and computer access (Chabran, 2001; Ono & Zavondy, 2008; Wilheim, 1997). Yet, more than twenty years later, understandings of immigrants' Internet and ICT access are still framed around the juxtaposition of "undereducated, undermotivated and underprivileged minorities competing against technologically sophisticated whites" (Jenkins, 2002).

By compounding ethnoracial identity with technological determinism, LIS research continues to negatively typecast immigrants. This racial and cultural profiling of immigrant populations has become part and parcel of LIS and/or digital divide research; it is an extension of U.S. social stratification. Race as well as non-U.S. origins are often presented as predictors of ICT access (Daniels, 2012; Fairlie, 2014; Hoffman & Novak, 1998; Prieger & Hu, 2008; Ono & Zavodny, 2008). Yet, the propensity toward using place of birth and race as causal variables in digital divide research is reductionist and overly simplistic in nature for, again, it discounts the great variance that exists among racial and/or immigrant groups. We witness this type of conflation in the metaphor of the "digital native versus digital immigrant" (Prensky, 2001), intended to distinguish those who were born prior to the digital age versus those who were born into it. The characterization of Internet adopters being like "heavily accent, unintelligible foreigners" or "not-so-smart (or not-so-flexible) immigrants" who "spend most of their time grousing about how good things were in the old country" (Prensky, 2001, 3) point to racist, nativist underpinnings. This equivocation continues within LIS research and practice, despite arguments that a reductionist, "have" versus "have not" binary of the digital divide ignores the great variance in terms of determinants of information inequality (Yu et. al, 2018).

The fields of population and migration studies paint a different picture, however, in that the Internet and ICT are acknowledged as components of the new ecosystem of migration (Fortunati, Pertierra, & Vincent, 2013). Renowned migration scholar Alejandro Portes posits that immigrants combine their "technological prowess with mobilization of their social capital" (Portes, 1997, p. 19). As global digitization continues, notions of immigrants as those in absolute information darkness no longer hold, even among those who are forcefully displaced. Migrants use the Internet and ICT now more than ever to participate in the information society prior to, upon, and after relocating (Nedelcu, 2012). It follows, then, that the digital divide gap between

immigrants and natives is closing in the U.S. context. For instance, Pew Research Center reports (Lopez, Gonzalez-Barrera, & Patten, 2013; Brown, Lopez, & Lopez, 2016) indicate that, according to microcensus data, the digital divide among non-native Hispanics has significantly narrowed; the present study investigates whether this is also case for Black immigrants.

Portable, mobile technologies, which function symbiotically as tools for not only local integration but also global communication, have radically changed how people resettle (Kennedy, 2004; Khvorostianov, 2012). Kok and Rogers (2017) refer to this as transglocalization. A subsection of population studies is dedicated to exploring the role of smartphones applications and social media in facilitating immigrants' acclimation to new environments and connections to resources. Immigrants are "digital subjects" or "e-actors" (Fortunati et. al, 2012) who have proven to be effective in Internet and ICT to the extent that they inspire new media such as Whatsapp, Notifica, and Arrived. Through digital technologies, diasporic identities are framed, families remain bonded, memories are chronicled, and life tools are organized. Despite calls for studies that highlight e-diasporic (Srinvivasan & Pyati, 2007) or ICT-mediated (Pyati et. al, 2008) immigrant information behavior, there has been little development particularly among the U.S.-based LIS research milieu. Rather than profiling immigrants as digitally divided, LIS research must evaluate whether and why disparities exist. Concrete measurements of ICT and Internet access based on large-scale data are ideal for these types of inquiries. Such studies might also be useful in disrupting biases within immigrant information behavior research. Accordingly, ICT and Internet access among U.S. Black immigrant households are examined here.

3 Methods

This study investigates:
>	RQ1: What percentage of U.S. Black immigrant households access ICT devices?
>	RQ2: What percentage of U.S. Black immigrant households access the Internet?
>	RQ3: In terms of ICT device and Internet access, how do Black immigrant households compare to the general population?

To explore how Black immigrants access ICT and draw comparisons with the general population, the researcher utilized data from the 2016 American Community Survey (ACS) microcensus. The annual ACS 1-year estimate is a household sample survey that is distributed nationwide by the U.S. Bureau of the Census to 3.5 million home addresses. Sampling for the ACS entails a multistage probability sample of households from all fifty states and the District of Columbia. The response rate equaled 94.7%. Households are randomly selected, then data is gathered about all persons in the household. The questionnaire contains structured, closed-ended items and solicits information on household members (e.g., including age, gender, race, Hispanic origin, marital status, ancestry, citizenship, languages spoken at home, income, work status) and resources (telephone and Internet service, housing type, tenure, rent). One person in the household functions as the reference person who completes questions for all members of the household, if applicable. The reference person must be at least fifteen years old. Each returned questionnaire represents a household. Since households are chosen and not individuals or families, data is gathered about all household members no matter their relationships to each

other. It is therefore important to distinguish that 1.) household composition is largely based on the responses of the reference person and 2.) there are no guarantees that the reference person will consult with or accurately portray household composition. This presents a limitation to census research and, subsequently, the research herein.

The ACS survey was disseminated between January 1, 2016 and December 31, 2016. The dataset was released for public use in September 2017. It was accessed for the present study in December 2017 via the U.S. Bureau of the Census' American Fact Finder database. Since the 2016 ACS data represents approximately 1% of the U.S. population, results on the total population estimates were calculated by replicating the weight variable within the dataset. These figures are subject to standard errors of inferential statistics.

Questions are asked of the household and not of the individual, so the unit of analysis is a household. The general population household variable entails all useable returned responses less those pertaining to Black immigrant households, totaling 3,122,147 households. The Black immigrant household variable was created by filtering foreign-born status and race—in this case, Black. ICT device and Internet access variables were cross-examined with Black immigrant household and general population household variables.

Table 1. Relevant 2016 ACS questionnaire items

Question

1. *What is Person 1's race?*

2. *Is this person a citizen of the United States?*

8. *At this house, apartment, or mobile home – do you or any member of this household own or use any of the following types of computer? Yes or No.* (Desktop or laptop; smartphone; tablet or other portable wireless computer; some other type of computer)

9. *At this house, apartment, or mobile home – do you or any member of this household have access to the Internet?* (Yes, by paying a cell phone company or Internet service provider; Yes, without paying a cell phone company or Internet service provider; No access to the Internet at this house, apartment or mobile home)

10. *Do you or any member of this household have access to the Internet using a* (cellular data plan for a smartphone or other mobile device?: broadband (high speed) Internet service such as cable, fiber optic, or DSL service installed in this household?; satellite Internet service installed in the household?; dial-up Internet service installed in this household?; some other service?)

Two techniques of data analysis were used in this study. The main discussion provides frequency distributions pertaining to Internet and ICT device access among Black immigrant households. Secondly, comparative analyses were used to examine how Black immigrant households fared when compared to general population households. Internet and ICT device access variables were determined by filtering three questions on the provision of computing devices and Internet service along with type of access to the Internet, as shown in table 1.

4 Results
4.1 Demographic characteristics

A total of 31,341 Black immigrant households were sampled. Approximately 90.5% (28,362) of households contained one family (table 2).

Table 2. Black households - Descriptive statistics

Demographic	%	n
One family HH	90.5%	28, 362
Income above poverty level	90.7%	28,425
Children under 18 in HH	52.8%	16,547
Married couple in HH	98.5%	16, 541
High school degreed adult in HH	51.4%	16,108
College degreed adult in HH	73.9%	21,160
Employed adult in HH	61.2%	20,886

Ninety-five percent of households had at least one married couple, and 52.8% (n=16, 541) reported children under 18 in the home. Additionally, 61.2% (n=20,886) of households had at least one adult who was employed. The average household income is $56,517, with 90.7% (n=28,425) of households having salaries above the federal poverty level threshold of $16,240 for non-single person households. About 51.4% (n=16,108) had at least one adult who completed grade 12 and 73.9% (n=23,160) of households had at least one adult who completed four years of college. Thus, descriptive statistics correspond with previous literature (Anderson, 2015a; 2015b; Anderson & Lopez, 2015) regarding Black immigrants' socioeconomic outcomes: households are characterized as predominantly having married couples, the presence of children, and incomes above $30,000 annually.

RQ1: ICT Device Access
Roughly, 80.6% (n=25,247) of households reported access to a smartphone device; 78.6% (n=24,635) of households had access to a desktop, laptop, or netbook computing device; 59.9% (n=18,758) had access to tablet devices, and 5.2% (n=1,616) had access to other computing devices, as shown in table 3.

Table 3. ICT device access among Black immigrant households

Device	%	n
Smartphone	80.6%	25,247
Desktop/Laptop	78.6%	24,635
Tablet	59.9%	18,758
Other Computing Device	5.2%	1,755

Approximately 81.9% (n=25,667) of Black immigrant households reported overall access to the Internet; 70.4% (22,074) reported access through smartphone plans; 68.2% (n=21,381) reported high-speed Internet access. Table 4 reports additional measurements.

Table 4. Internet access among Black immigrant households

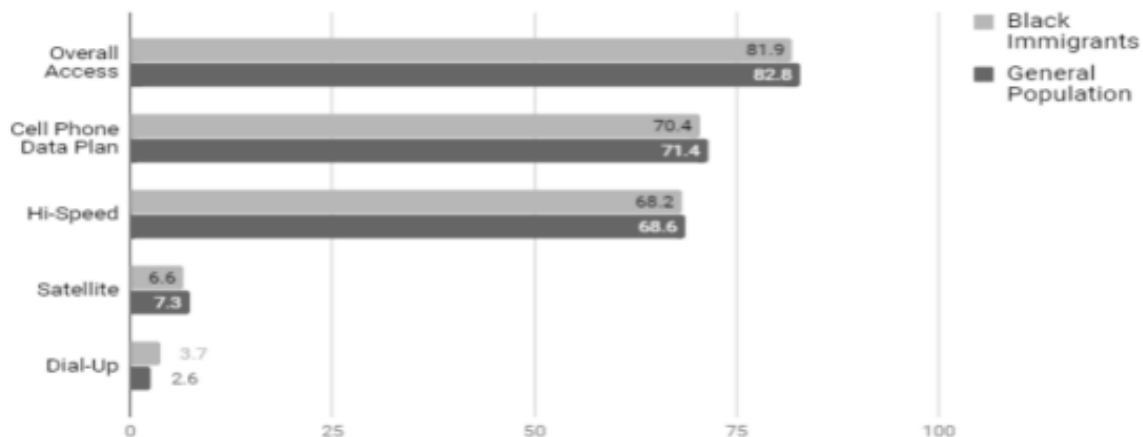| Internet Access	%	n
Overall Access	81.9%	25,667
Cell Phone Data Plan	70.4%	22,074
Hi-speed internet	68.2%	21,381
Satellite Internet	6.6%	2,082
Dial-Up	3.7%	1,161
Other Service	1.3%	414

RQ2: Comparison with overall population

To compare differences in ICT scores between Black immigrant and general population households, the researcher computed measurements for ICT device and Internet access within the general population. Descriptive statistics are provided in Table 5. One sample or independent sample t-test analyses were utilized to compare access between the two groups. All assumptions for parametric statistical tests were satisfied.

Table 5. Internet & ICT Device access among general population households

Internet Access	%	n	ICT Device Access	%	n
Overall Access	82.8%	2,775,588	Smartphone	76.8%	2,388,442
Cell Phone Data Plan	71.4%	2,600,748	Desktop/Laptop	79.1%	2,416,541
Hi-speed internet	68.6%	2,566,404	Tablet	63.1%	1,804,600
Satellite Internet	7.3%	240,405	Other Computing	3.0%	93,664
Dial-Up	2.6%	87,420	Device		
Other Service	1.4%	43,710			

Based on t-test analyses (Table 6), there was no significant difference between the two groups when it came to hi-speed Internet access: $t(31878)=4.50$, $p=.45$. However, there were significant differences between the two groups in terms of other forms of Internet access.

Figure 1. Comparison of Internet access – Black Immigrants and overall U.S. population

The general population displayed significantly higher levels of overall Internet access: $t(31936)=$ -2.9; $p < .01$, d=.34; cell phone data plan access: $t(31945)= 2.93$; $p < .01$, d=.85; satellite Internet access: $t(31942)=2.59$; $p < .01$; d=.71; and other types of Internet service: $t(31938)=4.19$; $p < .01$, d=.13. Black immigrant households displayed higher dial-up access: $t(31937)=6.79$; $p < .01$, d= -.91; (see Figure 1).

There was no significant difference as it pertained to computer/laptop access (Table 6): $t(31949)=.70$, p=.48. d=.13 (see figure 2). However, there were significant differences when it came to access to smartphone [$t(32059)=16.64$, $p < .01$, d=-.53], tablet [$t(31932)= -9.32$, $p < .01$, d=.87], other computing devices [$t(31906)=.8.89$, $p < .01$, d=.78], with smartphone access being higher among Black immigrants households. General population households displayed higher tablet device access [$t(31932)= 9.24$, $p < .05$, d=.48].

Table 6. T-tests for equality of means

| | Black Immigrant Households | | General Population | | 95% Confidence Interval | | t-value | df |
	M	SD	M	SD				
Overall Internet	81.9	.68	82.8	.66	1.83E+04	2.98E-03	2.91*	31942
Cellular Data Plan	70.4	.54	71.4	.54	2.01E-02	3.59E-02	2.93*	31945
Hi-Speed Internet	68.2	.56	68.6	.56	2.13E-02	4.55E-02	4.50**	31878
Satellite Internet	6.6	.76	7.3	.77	-2.53E-02	3.85E-02	2.59*	31942
Dial-Up Internet	3.7	.76	2.6	.76	-2.30E-02	1.30E-02	6.79*	31937
Other Internet	1.3	.77	1.4	.76	1.86E-02	3.01E-02	4.92*	31938
Smartphone	80.6	.43	76.8	.46	-3.67E-03	8.74E+00	-16.65*	32058
Desktop/Laptop	78.6	.44	79.1	.44	-1.88E-02	1.50E-02	0.70**	31949
Tablet	59.9	.55	63.1	.54	-6.77E-03	8.75E+00	9.24*	31932
Other Device	5.2	.47	3.0	.45	2.81E-03	3.19E-03	-8.89*	31906

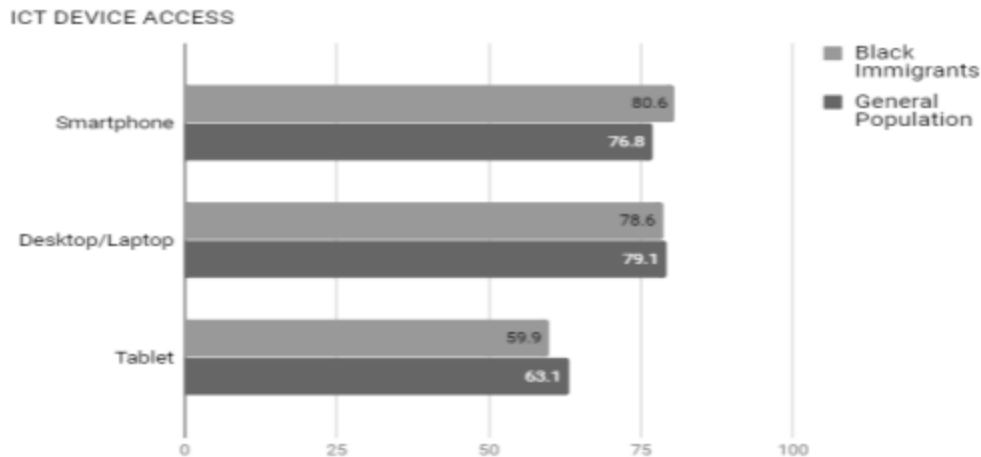*p<.05, two-tailed
**p<.01, two-tailed

ICT DEVICE ACCESS

Figure 2. Comparison of ICT device access – Black Immigrants and overall U.S. population

5 Discussion

Despite the prevailing view that immigrants lack ICT resources, access and skills, ACS data supports that Black immigrants primarily turn to mobile technology, though they maintain multiple forms of ICT and Internet access. Cellular data plan (70.4%) is the most prevalent form of Internet access for this group, and nearly the same amount had hi-speed Internet access (68.2%). The majority of households had access to smartphones (80.6%) and desktop/laptops (78.6%). Thus, Black immigrants' ICT and Internet behavior appears to be multidimensional. The group displays both intensive and purposive technology access (i.e., desktops/ laptops and hi-speed Internet) as well as more browsing-oriented or on-the-go access (i.e., smartphones and cellular plans). The data suggests that Black immigrants are not limited to portable use - in other words, smaller screen sizes, limited navigation, shortened content, compressed pages, interrupted signals and cursory technological competence. Based on results, Black immigrant households demonstrate the type of advanced computing hardware (i.e. laptops, desktops) and hi-Speed Internet that facilitate skills in systems, software, and document creation along with the adoption of technology into other aspects of their lives. These findings thus depart from conversations on low digital capacity among immigrants.

The similarities and differences between Black immigrant and general population households also outline dynamic patterns, and conclusions further dispel the notion of subpar ICT resources, access and skills among the foreign-born. Overall Internet access was a point lower among Black immigrant households (81.9% versus 82.8%), yet they displayed significantly higher levels of smartphone access (80.6%; 76.8%) and comparable hi-speed Internet access (68.2%; 68.6%). And while Black immigrant households had significantly higher levels of dial-up access (3.7% versus 2.6%), desktop/laptop ownership was shown to be on par with the general population (78.6%; 79.1%). This data supports the growing body of research on the narrowing digital divide gap among U.S. immigrants.

Immigrants writ large should not simply be sweepingly presented as digitally divided, as there may exist non-linear patterns. This study underscores the importance of empirical research on immigrant information behavior - ones that probe presumptions of information poverty. By analyzing national patterns, information professionals will be able to ascertain whether and where immigrants differ from dominant groups. This knowledge must be combined with understandings of local realities and needs. Tangential to this, when exploring immigrant information behavior, LIS researchers would do well to borrow from population studies and demography. These domains fare better when it comes to positioning the Internet and ICT devices as vital migration tools. Moreover, LIS could benefit from strength-based orientations. For example, the results from this study reveal that, while ICT and Internet access among Black immigrant households differs from the general U.S. population, this group is e-Included, collectively. Positive outcomes such as these must be amplified. Knowledge workers and information professionals, particularly librarians, can use these findings to improve service provision models. In addition to shifting from orientations that suggest deficiency, librarians can question "All-American normativity." This ethos parallels misconceptions about immigrants' identities, digital capabilities, and information assets. The goal of this paper was to "challenge LIS professionals and researchers to probe their own attitudes, assumptions and agendas. Often, well intending diversity efforts pigeonhole immigrant communities." (Ndumu, 2020, p. 2).

6 Conclusion

The case of Black diasporic immigrants' Internet and ICT access is presented simply to argue that LIS must broaden its methodologies, frameworks and lexicon in order to avoid biased inferences resulting from an overreliance on siloed evidence. However, there is still more unknown than known about the information realities of U.S. immigrants, most especially Africans, Afro-Caribbean, and Afro-Latin communities. This study provides a glimpse into their information access, but the picture is incomplete. Future investigations should evaluate the quality of Internet and ICT access, particularly at the individual level.

When it comes to examinations of immigrant information behavior, researchers must resist generalized, abstract and thinly-supported suppositions. The notion that immigrants are digital novices does not hold in light of the reality that the Internet and ICT devices, especially smartphones, are preferred tools for private, cost-effective, low risk and efficient exploration of new information environments. We must ponder ways of disrupting the stance of digital deficiency and maladaptive information skills that LIS so readily depends on.

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