

A Tale of Two Divides: Technology Experiences Among Racially and Socioeconomically Diverse Older Adults

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Abstract. Using information and communication technologies (ICTs) can improve older adults' overall well-being and can be a catalyst for social integration and inclusion into society. While older adults are often compared to other age cohorts, based on previous digital divide research, there may be a significant amount of variation *within* older adult populations with regards to their ICT experiences, attitudes, and uses. Our study seeks to explore the potential gap by examining and comparing ICT uses, views, and experiences among older adults from diverse racial/ethnic and socioeconomic backgrounds. Four semi-structured focus groups (n = 40) were conducted with older adults from two separate cities in Mid-Michigan in the United States: Greater Lansing area and Detroit. Our findings reveal that older adults' experiences, uses, and perceptions about ICTs differ down racial and socio-economic lines. Our study demonstrates that there are potential sub-divides within traditionally digitally divided populations.

Keywords: Older adults · Digital divide · ICTs · Race · Socioeconomic status

1 Introduction

Using information and communication technologies (ICTs) can improve older adults' overall well-being and can be a catalyst for social integration and inclusion into society [1–5]. Despite the potential benefits afforded by ICTs, older adults (i.e., adults age 65 and older) have the lowest computer ownership and Internet use among all age cohorts [6]. Only 59 % of older adults report they use the Internet compared to 85 % of all American adults age 18 to 64 years of age. [7]. Additionally, only 47 % of older adults in the United States report access to broadband service [7]. The digital divide literature traditionally focuses on the various gaps between those who do and do not have access to the benefits of digital inclusion. These divides are tied to factors such as age, race, gender, socioeconomic status, and population density [6, 8–10].

To categorize older adults' ICT use by age, however, may be too simplistic a descriptor for such a vast and diverse population. For instance, older racial/ethnic minorities report using ICTs less and having less experience with ICTs than white older adults [11].

Moreover, older adults' attitudes toward and use of ICTs are driven by past experiences with ICTs, which may be fundamentally different from both an inter-generational and intra-generational perspective [11, 12]. In other words, while older adults are often compared to other age cohorts, based on previous digital divide research, there may be a significant amount of variation within older adult populations with regards to their ICT experiences, attitudes, and uses. Our study seeks to explore the potential gap by examining and comparing ICT uses, views, and experiences among older adults from diverse racial/ethnic and socioeconomic backgrounds.

1.1 Diversity of ICT Usage Among Older Adults: Racial and SES Differences

Previous research indicates that digital inequalities, such as the adoption of ICTs, may replicate other social inequalities [14]. For instance, older adults with an annual household income of \$75,000 or more are nearly five-times more likely to own a tablet than older adults with an annual household income lower than \$30,000 [7]. Older adults age 65 and older are also much less likely to have home broadband (43 %) compared other age groups (18–29: 80 %; 30–49: 78 %; 50–64: 69 %) [14].

Moreover, racial differences regarding ICT use and adoption also receives limited attention. Prior research indicates that racial digital divides continue to exist: African-Americans (64 %) are less likely to have home broadband compared to White individuals (74 %) [14]. African American (12 %) and Hispanic American (13 %) adults are more likely to rely on their smartphones for Internet access, compared to only 4 % of White smartphone owners [15]. Yet, some findings suggest that older African American and White adults have similar rates of cellphone adoption [7].

Furthermore, African American adults are less likely to go online, for any purpose, especially when they have not attended college. For example, when holding constant socioeconomic status (SES), 45 % of African American seniors use the Internet compared to 63 % of White adults [7]. Racial differences have been identified regarding other types of ICT use as well: 19 % of White older adults and 12 % of African American older adults use tablets; 19 % of White older adults, compared to 11 % of African American older adults, use E-readers, such as a Kindle [7]. Despite these descriptive differences, in-depth research exploring a more nuanced understanding of racial and SES divides, related attitudes, experience, and ICT use is lacking.

1.2 Importance of Digital Inclusion for Older Adults

ICT use yields various benefits for older adults' well-being, by facilitating access to social support networks, information to make life decisions, and promoting independence [4, 11]. ICT use among older adults is linked to reduced feelings of isolation, loneliness, and depression [1–5]. Older adults reporting such benefits from ICT use, perceive ICTs to be positive for their personal relationships by increasing their feelings of social connectedness to family and friends [2, 5]. Moreover, older adults use ICTs for inclusion into modern social networks [1]. To this end, ICTs afford older adults the

means to facilitate meaningful relationships with both their geographically close and distant social ties. However, no research has examined how these benefits may vary among racially and socioeconomically diverse older adults.

Older adults' ICT use and the perceived benefits of ICT use are driven by experience [11, 12]. Perceived usefulness, enjoyment, social influence, confidence, and ease of use are drivers of ICT use among older adults [1, 6]. Furthermore, self-efficacy and experience with ICTs leads to lower levels of anxiety regarding ICT use [6, 11]. As ICTs are such an integral part of social connectedness and well-being for older adults, it is imperative to understand older adults' experiences with ICT use and how those experiences promote or detract from further adoption of ICT use across various demographic lines. Almost no research has examined these processes among diverse racial and socioeconomic groups of older adults. To facilitate a deeper understanding of how racial and SES differences may affect older adults' experiences with and use of ICTs we pose the following question:

What are the ICT experiences among racially and socioeconomically diverse older adults?

2 Methods

Four semi-structured focus groups ($n = 40$) were conducted with older adults from two separate cities in Mid-Michigan in the United States: Greater Lansing area and Detroit. U.S. Census Bureau [17] estimates indicate that approximately 9.7 % of Lansing residents are 65 years of age and older and that 51.6 % are female. Nearly 24.7 % of Lansing residents attained a Bachelor's, master's, professional, or doctorate degree. In terms of race/ethnicity, 61.2 % of Lansing residents are white and 23.7 % are African American and the median household income is \$36,054. Census Bureau [17] estimates indicate reveal that a slightly larger percent of Detroit residents are 65 years of age and older (11.5 %) and 52.7 % are female. In contrast to Lansing residents, roughly 12.7 % of Detroit residents attained a Bachelor's, master's, professional, or doctorate degree. Moreover, 10.6 % of Detroit residents are white and 82.7 % are African American and the median household income is \$26,325.

The focus groups were held in November and December of 2015 and February of 2016. Participants were recruited using several different strategies. Participants from the Greater Lansing area were recruited using the online SONA community pool, which allows local residents to view opportunities to participate in research conducted by Michigan State University graduate students and faculty. Participants from the Metro-Detroit area were recruited by a coordinator from a prominent local senior center. Each focus group had between 8 and 12 participants and lasted approximately 90–120 min. Participants were compensated \$20 for their involvement in the focus group.

During the semi-structured focus groups, participants were probed to discuss their views, experiences, and use of information and communication technologies. Questions assessed the types, frequencies, and participants' motivation for using ICTs. Participants were asked how they decide on what type of communication channel and device they use to contact specific social ties (i.e., spouse, friends, children, grandchildren, etc.).

Additionally, participants were encouraged to discuss how they feel ICT use impacts their relationships with others, as well as the ways they feel ICT use is beneficial or potentially harmful.

Prior to each focus group session, participants completed a questionnaire that consisted of 15 total questions. Questions assessed sociodemographic characteristics, ICT access and ownership, how often participants use ICTs to communicate with various types of social ties (i.e., family members, close friends, and acquaintances), as well as participants' relationship satisfaction. The ICT use question used a 4-point Likert scale response options.

2.1 Data Analysis and Procedure

During each focus group session, audio was recorded using smartphones & tablets, while two of the focus groups were also recorded using a high definition 360 degree video recording device. The audio from each session was transcribed by a third party service. Additionally, research assistants were present in each session and recorded detailed field notes. Upon completion of each focus group session the moderator and research assistants participated in an informal debrief to discuss their observations and potential themes. Field notes, audio and transcriptions were reviewed independently by research assistants to identify themes (i.e., similarities and differences between sites in how participants use and benefit from using ICTs), which were relevant to the focus of this investigation. Data from the questionnaires was coded and entered into an SPSS dataset. Descriptive analysis was used to compare participants from the two sites.

2.2 Results

Table 1 shows the demographic descriptive results of the focus groups. Demographic characteristics for the two locations were divergent; however, the ages are relatively similar. The mean age of Greater Lansing area participants was 70 years old, while the mean age of Detroit participants was 73 years old. Both locations consisted of mostly females (Lansing: 68 %, Detroit: 95 %). The racial composition of Greater Lansing area participants was 84 % White, 11 % Hispanic, and 5 % African American, while the racial composition of Detroit participants was 86 % African American and 14 % identified as "other."

A single item question was used to assess perceived economic hardship, which contained three response choices— "more than enough financial resources to get by," "just enough financial resources to get by," and "not enough financial resources to get by." As shown in Table 1, participants from the Greater Lansing area were more likely to report having more than enough to get by than participants from Detroit. The participants from Detroit perceived more economic hardship, with 45 % reporting that they do not have enough financial resources to get by compared to only 11 % of those from the Greater Lansing area.

The Greater Lansing area participants were also more likely to report being married, while the majority of Detroit participants reported that they were divorced (42 %).

Table 1. Demographics

Location	Greater lansing area	Detroit
Age		
Age range	65-76	62-88
Mean age	70	73
Gender		
Male	32 %	5 %
Female	68 %	95 %
Race		
White	84 %	0 %
Hispanic	11 %	0 %
African American	5 %	86 %
Other	0 %	14 %
Perceived Economic Hardship		
More than enough	47 %	15 %
Just enough	42 %	40 %
Not enough	11 %	45 %
Education		
Less than high school diploma	0 %	10 %
High school graduate	0 %	19 %
Some college	47 %	28 %
College degree	32 %	19 %
Graduate school degree	21 %	24 %
Marital Status		
Married	74 %	21 %
Single	0 %	11 %
Widowed	0 %	26 %
Divorced	26 %	42 %

Level of education was also more diverse in Detroit, with 29 % reporting a high school degree or less, while all the Lansing participants reported having some college or more.

2.3 ICTs and Connectedness

As shown in Table 2, participants from both focus group locations reported using a variety of ICTs to communicate with family, close friends & acquaintances. Descriptive results suggest that, compared to the Detroit participants, a larger portion of Greater Lansing area participants used mobile phones, Internet enabled laptops & tablets, and desktop computers to communicate with others.

Meanwhile, a larger portion of Detroit participants reported using landline phones to communicate with others (90 %), while only 53 % of the greater Lansing area participants use landlines to communicate with others. Preferred ICT was one of a few areas where results suggest differences among older adults from different racial and SES backgrounds.

Table 2. ICT Use characteristics

Location	Greater lansing area	Detroit
Landline		
Yes	58 %	86 %
No	42 %	10 %
Missing data	–	4 %
Mobile phone		
Yes	100 %	81 %
No	0 %	14 %
Missing data	–	5 %
Desktop computer		
Yes	68 %	48 %
No	26 %	43 %
Missing data	6 %	9 %
Internet enabled laptop computer		
Yes	74 %	43 %
No	21 %	38 %
Missing data	5 %	19 %
Internet enabled tablet		
Yes	79 %	33 %
No	21 %	57 %
Missing data	–	10 %

2.4 ICT Experiences, Use, and Perceived Usefulness

An interesting divergent trend emerged between older adults from the two cities with regards to ICT experience and perceived utility of ICT devices. Participants from the Greater Lansing area tended to discuss a wide range of ICT device ownership and use. Descriptive results suggest that in comparison to the Detroit participants, a larger portion of the Greater Lansing area participants used mobile phones, Internet enabled laptops & tablets, and desktop computers to communicate with others. Meanwhile, a larger portion of Detroit participants reported using landline phones to communicate with others (90 %), while only 53 % of Greater Lansing area participants used landlines to communicate with others. One Greater Lansing area participant stated:

I'm from San Diego. We would've never made it to Michigan as efficiently as we did, without our smartphones and the GPS because we would, we would find out the hotels, we'd find out the best price, we could negotiate the room rates, we'd find a restaurant that we liked.

In addition to utility aspects of ICTs, other female Greater Lansing area participants discussed how ICT & eBooks have impacted their leisure time:

I like my Kindle. I have never been a real big reader, and I've gotten hooked on my Kindle. I love to read at night now, and I think I could get the same thing on my tablet though. So I think I'm overlapping myself, but I really like just holding it, and I like the light, I can turn it on when he's sleeping and it doesn't bother him.

When the Greater Lansing area participants were prompted to discuss their favorite ICT, one male participant stated:

Well, the GPS gets me to the spot that I had previously marked in that there as a waymark, and then my fish-finder tell me whether or not I should be staying there or be moving on or whatever. So that old trick about putting a big X on the bottom of the boat doesn't work. [Laughter].

Another greater Lansing area participant stated other advantages of ICTs:

[My favorite ICT is] a pen on my iPad because I have the old technology and I would rather write than type. And just keeping up in how you integrate the new with the old.

Conversely, participants in both of the Detroit focus groups unanimously claimed that their favorite ICT is their landline phone, while only a couple of participants in each group maintained that their cellphone was their favorite device. Although a few participants in both Detroit sessions indicated that the cellphone was their preferred ICT, most replied that their favorite ICT in general and their favorite ICT used to communicate with others was:

Landline! I love my Landline! Landline!

When probed for why landlines are their favorite ICT, one respondent stated:

You don't have to worry about charging it. You don't have to worry about dropping a call. Landlines are more convenient.

The landline does not cut you off. The landline does not travel, no signals. The landline doesn't go through all of that.

...But the point is with the landline, you don't have to worry about charging it unless you've got a cordless phone. We had a three day black out or two and a half day black out. The towers was down you couldn't use this [cellphone]. But you could use the landline as long as it didn't need to be charged. And sometimes you don't feel like getting tied up with trying to learn the technology cause it's time consuming like she was saying, ... she trying to figure out how do I text, how do I communicate with this thing. And the benefits too with this new technology; you can reach so many people. But like I said it's pros and cons.

...you don't have to charge the landline. It's on, the phone automatically, you can put a voice message on it and it'll record the message. If you're busy or something, you don't have to get the phone call. Each, all these different things you have to charge 'em and make sure they're running.

These quotes illustrate the myriad reasons why older adults from Detroit relied upon the landline phone.

Other Detroit participants, though fewer in number, felt that cellphones offered them similar benefits regarding convenience:

Convenience too for me, its convenience. You know you don't have to be tied at home to receive confirmation that you need. I do like the text feature when somebody needs to give you an address or something. I just tell them to go ahead and text me the address. It is very convenient.

I agree with everybody but it has this pros and cons. The reason I like the cellphone is for convenience because you can pick it up wherever you at, as long as it's charged...

I was very happy to have my cellphone because I'm able to do business and check with the doctors, and the doctors call you, and you got to call them and everything. And we can have conference calls and take care of business even when I'm out in the street, and that type of thing so... But I don't... A lot of people that know me they will say "You didn't answer you phone when I called." And I say, "I'm not a slave to my phone."

And I said, "That's why I have voice mail."

When detailing their salient experiences with ICTs, one Greater Lansing participant discussed memories and experiences related to recreational activities and travel. One Greater Lansing participant stated:

I was afraid to drive in a big city. I was afraid of certain streets. I never could figure out when my turn was coming up, and I'm a good driver in general. I never had an accident. I'm a good driver, but certain things really come unglued, repeatedly, and now that I have a GPS, I call her Evelina, [laughter] I stick her on my dashboard, and she keeps me up to speed on traffic and doing all the right turns. And limit my ETA. I text my husband, my ETA. It's totally given me freedom. I'm not afraid to drive at night anymore.

Another Greater Lansing participant added:

I do a lot of Walleye fishing, so I can find the shoals where the forage is and so forth, and we know that's a hotspot, so we'll waymark it. A couple years ago we went out on the ice in the UP, we went out about two and a half miles and a little baby knock, the ice is like 3–4 feet thick. I mean, I had no idea where we're at. And then you take your ice fi... Or fishfinders, down on the ice and there they are.

Other Greater Lansing participants described experiences with ICTs that enabled them to connect with family. One Greater Lansing participant said:

When I Skype with my grandson, I can at least see him. Because I think there is more of a... [Again], you don't misread what the communication is, because you can see them versus texting or emailing. So that, to me, is helpful to feel connected because my kids live out of state. So that has helped to feel connected.

Greater Lansing focus group participants recognized the amplifications provided to them through the use of ICTs, whether these involved helping them navigate roads or their lives, or communicate in more realistic modes given the two-way visual communication made possible through Skype, Facetime, and other ICTs. Participants from Detroit, on the other hand, spoke of ICT experiences involving anxiety and concerns. One Detroit participant recalled an experience involving learning how use ICTs for work:

On the job we have to keep up with today's times. And I didn't know anything but I wanted this job. I needed this job, so I went to school for it. I didn't know how to turn on the computer. It was very scary cause it was just something strange out of this world, a monster standing here I have to tackle. And I'm like well I have to learn this. So I was very fearful, and I was very timid. But once I got the hang of it, you can constantly apply it and keep on applying it to newer and later technology out there. But it was very fearful and I was so bad, when I graduated, the whole class gave me a standing ovation.

Other Detroit participants discussed specific concerns to information security with regard to ICTs and online banking. One Detroit participant stated:

I listen to what they're saying about how they can steal all of your information. Therefore, I don't do it online. You know what I do it for? I do it through my checking account. I do the E-F-T, transfer. That's how they get my money out of my checking account. End of the month my check come, everything's covered. To me, that's better.

Another Detroit participant followed and stated:

And what I do is, I have a separate account for paying bills, and I had all of my bills come out of one account. Now, if they steal out of that one, some of those checks are gonna bounce. My savings and stuff, I don't have that information online.

Other Detroit participants cited negative experiences with upgrading ICTs and concerns of cost as salient experiences that had affected their attitudes toward ICTs. One Detroit participant stated:

Upgrading. Every time you turn around, you can't hardly get a phone without it being obsolete, and there's nothing wrong with the phone. I mean it works perfectly. It does... A smartphone does most of the stuff, might have some more features but you feel you're always compelled to upgrade and spend more money unnecessarily.

Another Detroit participant echoed the previous sentiment and said:

And initially when stuff comes out the prices... And the one thing I really hate is that the retailers are just so driven by that almighty dollar. That they... They're always up.

To summarize, participants in the Detroit and Greater Lansing focus groups had distinct perspectives, uses, and experiences regarding ICTs. Participants from the Greater Lansing focus group reported a wider variety of ICTs used than the Detroit participants. Detroit participants reported landlines and mobile phones as their primary ICTs of choice due to perceived convenience and reliability. The participants from Greater Lansing experienced less economic hardship, were more educated, and they reported a wider variety of uses of ICTs for maintaining and amplifying aspects of their lives. Further implications of these results are discussed presently.

3 Discussion

Our results show that older adults' experiences, uses, and perceptions about ICTs differ down racial and socio-economic lines. The digital divide was originally conceptualized as the unequal distribution of ICT hardware [18, 9]. However, over the course of the past decade this conceptualization of the digital divide as one simple hardware based divide has shifted to include a series of more complex divides. In particular, it has been posited that there are four distinct access gaps, which can have an influence on an individual's likelihood to use and benefit from ICTs: material access gap, mental access gap, usage access gap, and skills access gap [9]. Our findings echo earlier digital divide research suggesting that older adults' ICT use and perceptions may be driven by past experience [11, 12]. Furthermore, our findings show that older adults appear to find themselves differently divided based on various demographic factors.

While the digital divide has been closing for certain populations (i.e., women) [9], our findings indicate and confirm that the differential impacts of the digital divide remains [17, 18], particularly for older adults. To elaborate, the Detroit based older adults reported very different experiences and attitudes towards ICT compared to the more affluent East Lansing group. The experiences and circumstances of the Detroit group may have prompted a shift from simply being "information have-nots" to

becoming “information want-nots” [9]. In order to truly understand this traditionally digitally divided population, we must first begin to understand the digital differences, or sub-divides, that exist within older adults.

Our findings suggest that more disposable income may promote greater opportunity to use a wider variety of ICTs and experience various benefits associated with ICT use. The predominantly White and higher SES of older adults from the Greater Lansing area reported using ICTs to facilitate a wider variety of activities that lend themselves to positive experiences with ICTs (i.e., Travel, Skyping with family, recreational excursions). The predominantly African American and lower SES older adults from Detroit appear to be driven in their ICT use by more negative experiences or fear of technological failure. Such experiences may promote a strong loyalty to older ICTs such as landlines and simpler mobile phones and may serve as barriers to adoption of a wider variety of ICTs. In essence, for individuals from lower SES groups, the perceived unreliability of certain ICTs may have an inverse relationship with their motivations and financial ability to adopt and use ICTs.

4 Conclusion and Limitations

Previous digital divide research demonstrates that the likelihood of ICT access is affected by various demographic factors such as age, race, and SES. Later digital divide literature expands to include a number of divides, rather than just access to ICTs. Our study demonstrates that there are potential sub-divides within traditionally digitally divided populations. In other words, factors such as race and SES, can compound to result in different levels of ICT experience, uses, and attitudes. While older adults are the age group with the lowest level of ICT adoption, there are stratified layers of access and use within this large and diverse group. The results indicate there is a great deal of experiential variation within this generation, which could be just as important as intergenerational differences.

One potential limitation of our study is that we focused specifically on older adults from suburban and urban locations. Furthermore, all participants currently reside in Michigan. Future research should consider older adults from more rural locations and from various regions throughout the United States in order to improve generalizability of the results.

Despite some potential limitations, our research indicates that in order to effectively promote older adults’ digital inclusion researchers must first develop an understanding of the digital sub-divides that exist within the population of older adults. Moving forward, it is important to realize that older adults comprise a vast and varied population, which has a great diversity of ICT uses, experiences, and attitudes. Differences in older adults’ ICT uses, experiences, and attitudes should be accounted for when attempting to design interventions or create policies that affect this particular population.

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