Computers and Internet Access

Since 1998, computer ownership has doubled in Broward County. Today, more than 93% of Broward households own a computer or smartphone, and 84.7% have access to the Internet through an active cable or cellular network subscription. Those without Internet access pose challenges to the online format for the 2020 Decennial Census count that will occur on April 1st.

IMPORTANCE OF COMPUTERS AND THE INTERNET

Computers and Internet access have become integral to modern living for a variety of reasons, ranging from the simple to important. Uses include access to information, shopping, entertainment and socializing, learning, banking, employment, health care, and applying for most anything including permits. The importance of Internet access is even extending into civic participation. For the first time, the 2020 decennial Census will be conducted largely online. Under the U.S. Census Bureau's plans, 95% of households will be invited to submit their responses over the Internet. However, computer and Internet access are not universal.

Trend data collected at the national, Florida, and Broward County scales comes from the Current Population Survey (CPS)[i], American Community Survey (ACS)[ii], and DataFerret[iii]. Data collection about computers at the national level appeared in 1984, with Internet access data appearing in 1997[iv]. Over this time period, dramatic increases have been seen in household access to computers and the Internet across all geographic scales. In the past 30+ years, computer access in the U.S. and Florida has increased to over 90% of households. Since 2000, the rate of computer ownership in Broward County has been slightly higher than statewide and national rates in both computer and Internet access.

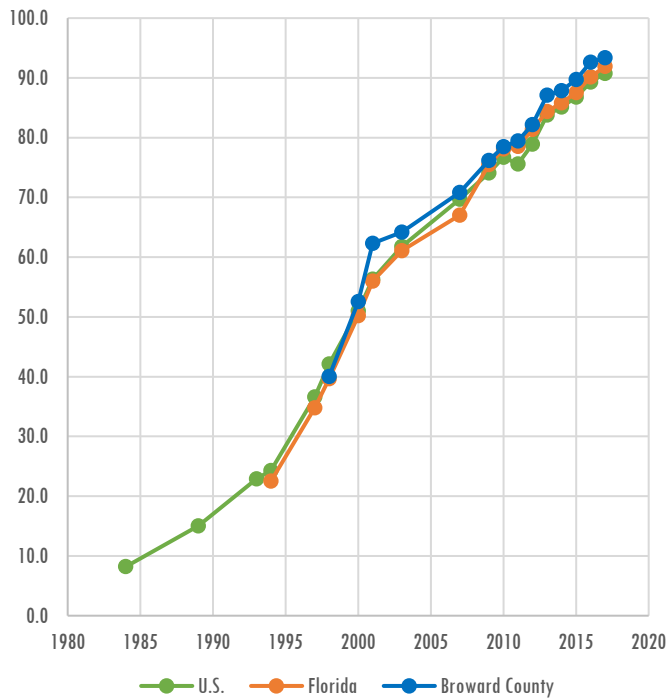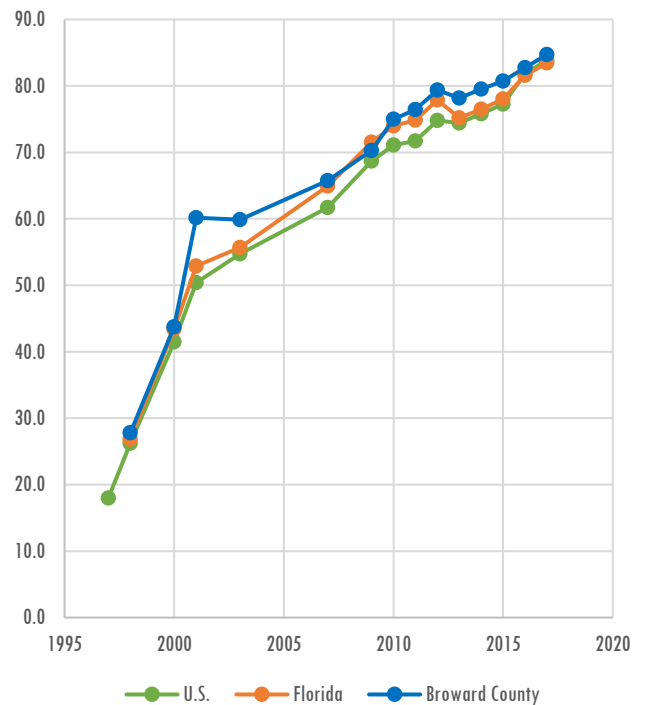**Figure 1: Percent Households with Computer at Home**

Figure 2: Percent Households with Internet Access at Home

Sources for both graphics: See Endnotes Section v,vi.

DIGITAL DIVIDE: URBAN *vs* RURAL

The term Digital Divide is used to describe limited access some people have to modern technology that results in their inability to fully partake in America's modern economic, political and social life. U.S. Census Bureau statistics indicate that the Digital Divide can be caused by socio-economic characteristics, which include urban vs. rural living, among other reasons. Whether people live in the city or the country can impact the rates of Internet access. Access rates in rural areas are likely impacted by the lack of a physical communications network since providers are unable to offer service at competitive rates where population densities are very low. In Florida, almost half of the counties (32 out of 67) are considered rural[v]. In these counties, the average household Internet access rate is 66%, lower than the national average of 67%. In Broward County, one of the State's most urbanized counties, the household Internet access rate is 81%, surpassing the national average for urban counties of 75%. The top 15 urban counties in Florida have an average household Internet access rate of 81% and an average household with computer rate of 89%. Broward County's rates of access to computers in households and Internet rates are greater than the average rates of the top 15 urban counties. Seminole County in Central Florida has the highest rates of household access to computers and Internet in the State at 94% and 89% respectively.

Table 1: Computers and Internet Access – Top 15 Urban* Counties in Florida

County	Percent With Computers	Rank With Computers	Percent With Internet Access	Internet Access Rank	Population	Population Density	Population Rank	Population Density Rank
Seminole	94.0	1	89.2	1	449,260	1,302.2	13	4
Orange	91.8	6	83.6	6	1,290,216	1,286.4	5	5
Broward	90.2	10	81.3	16	1,890,416	1,547.0	2	2
Hillsborough	90.2	11	82.8	9	1,351,087	1,261.5	4	6
Lee	90.0	12	80.9	18	700,165	833.5	8	8
Brevard	89.9	13	83.6	7	568,183	538.6	10	12
Palm Beach	89.2	16	81.4	15	1,426,772	644.1	3	11
Manatee	89.1	18	78.1	31	363,542	476.5	15	14
Sarasota	89.0	19	81.9	14	404,839	699.2	14	9
Escambia	88.3	25	80.8	21	309,924	461.2	20	15
Duval	87.5	29	78.9	30	912,043	1,070.5	7	7
St. Lucie	87.3	30	79.8	23	298,763	516.9	21	13
Pasco	87.0	32	79.2	28	498,136	651.2	12	10
Pinellas	86.4	33	79.1	29	949,842	3,286.7	6	1
Miami-Dade	85.1	37	73.6	40	2,702,602	1,362.2	1	3
AVERAGE	89.0		80.9					

*Note: Top 15 urban counties in Florida determined by ranking population density as a ratio of population to total land area.
Source: U.S. Census Bureau, Tables B01003, B28001, & B28011, 2013-2017 American Community Survey 5-Year Estimates.

DIGITAL DIVIDE: SOCIAL AND DEMOGRAPHIC CHARACTERISTICS

While Broward County has high rates of computer and internet access, it remains influenced by characteristics associated with the Digital Divide, including age, education, household income, race, and ethnicity.

Age is an important factor. Seniors lagged in computer with Internet access compared with people 64 and younger. In Broward County, 72% of seniors living in households have computers and Internet access, while the rate for the younger age groups is 87%. The gap between age groups in the County is 15%, similar to the national level (17%), but slightly higher than the State level gap (10%). Rates of computer ownership and Internet access in Florida are higher than the U.S. for the older age group. Broward rates are higher than the U.S. and the State overall, as shown below.

Table 2: Computer and Internet Access by Age Group – U.S., Florida, and Broward County

Age Group	% U.S Population with Computer & Internet Access	% U.S Population without a Computer	% Florida Household Population with Computer & Internet Access	% Florida Population without a Computer	% Broward County Population with Computer & Internet Access	% Broward County Population without a Computer
Children	84.9	5.3	83.9	5.7	87.2	3.3
Adults	84.5	6.6	83.7	6.7	86.7	4.6
Senior	67.7	23.3	73.2	17.5	71.8	18.1

Source: U.S. Census Bureau, Table S2802, 2013-2017 American Community Survey 5-Year Estimates

Computer and Internet access also vary according to race and ethnicity. Nationwide, African-American and Hispanic populations have the lower levels of computer ownership and Internet access, while the Asian population have the highest. In Broward County, computer ownership and Internet access rates for the Hispanic population were actually higher than the White population and notably better than the rates of access for the Hispanic population at the national and State levels.

Table 3: Computer and Internet Subscriptions by Race and Ethnicity – U.S., Florida and Broward County

Race & Hispanic/Latino Origin	% U.S Population with Computer & Internet Access	% U.S Population without a Computer	% Florida Population with Computer & Internet Access	% Florida Population without a Computer	% Broward County Population with Computer & Internet Access	% Broward County Population without a Computer
White alone	83.5	8.3	83.4	7.9	86.8	5.9
African-American	72.4	13.6	71.8	13.3	77.2	8.5
Asian	91.5	3.6	91.0	3.6	82.0	2.7
Hispanic/Latino Origin (any race)	76.5	10.8	79.0	9.8	87.5	4.8
Other Races	78.8	9.2	82.3	7.4	89.4	6.4

Source: U.S. Census Bureau, Table S2802, 2013-2017 American Community Survey 5-Year Estimates

As with most other areas in the U.S., computer and Internet use in Broward increases with each level of education. In contrast, access to technology for the lower levels of education is 5% higher than the Nation and State.
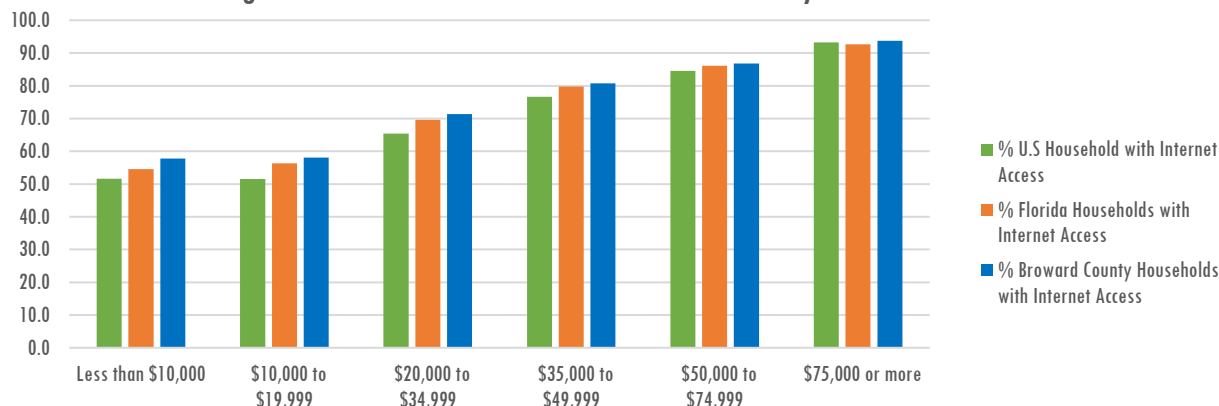
Table 4: Computer and Internet Access by Education – U.S., Florida and Broward County

Education	% U.S Population with Computer & Internet Access	% U.S Population without a Computer	% Florida Population with Computer & Internet Access	% Florida Population without a Computer	% Broward County Population with Computer & Internet Access	% Broward County Population without a Computer
No high school diploma	58.7	27.2	60.9	24.7	65.6	20.8
High school graduate/some college	79.0	11.1	79.9	10.0	82.1	7.9
Bachelor's degree or higher	92.7	2.7	91.0	3.3	91.9	2.7

Source: U.S. Census Bureau, Table S2802, 2013-2017 American Community Survey 5-Year Estimates

Similarly, the share of households with Internet access increases with household income. In Broward, the share of households with Internet access is higher than the nation and State at all income levels.

Figure 3: Percent Households with Internet Access by Household Income

Legend:
- % U.S Household with Internet Access
- % Florida Households with Internet Access
- % Broward County Households with Internet Access

Source: U.S. Census Bureau, Table B28004, 2013-2017 American Community Survey 5-Year Estimates
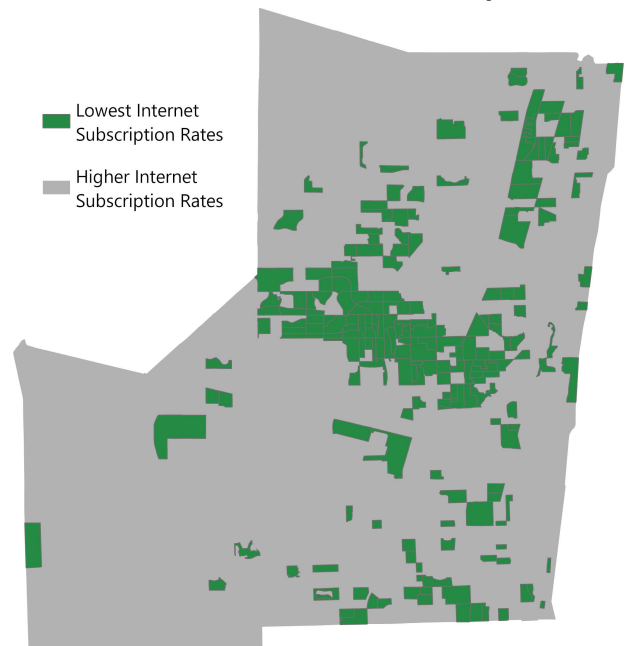
CHALLENGES FOR THE CENSUS

Every 10-year Census has significant impacts on political representation and government funding, and the 2020 Census will be no different. Ensuring a complete and accurate count is crucial to local governments, particularly as it relates to access to federal funding. For the first time, the US Census Bureau will be encouraging residents to respond to the 2020 questionnaire online. Challenges include limited Internet access in some areas, limited public awareness about the value of the Census, and lack of skills or comfort using online applications. Therefore, local libraries will be heavily relied upon to provide information, technology, and training resources to enable Americans to connect with government and the Census[vi]. While Internet service coverage is not at issue in the County, subscription to the service is. Figure 4 illustrates areas (in purple) where computer ownership is low (including smartphones, tablets, etc.). Figure 5 illustrates areas (in green) where households may own computers, but for a variety of reasons are not subscribed to Internet access. Areas shown in grey have comparatively high rates of computer and Internet access within the County.

Planning staff anticipates that places with low rates in both computer ownership and internet subscriptions will pose a great challenge for data collection during the 2020 Census and may need greater assistance to ensure proper counts. The maps below can be viewed as an interactive webmap that includes additional demographic and economic layers.

Figure 4: Broward County Block Groups by Households with No Computer

- Lowest Computer Ownership Rates
- Higher Computer Ownership Rates

Figure 5: Broward County Block Groups by Households with No Internet Subscription

- Lowest Internet Subscription Rates
- Higher Internet Subscription Rates

Source: U.S. Census Bureau, Table S2802, 2013-2017 American Community Survey 5-Year Estimates

Broward County is partnering with local governments, agencies and a variety of non-profits to raise awareness and encourage participation from the population groups that are hardest to count. Additional socioeconomic factors outside computer and internet access contribute to low response rates on the Decennial Census. The Response Outreach Area Mapper (ROAM) displays areas with historically low response rates, as well as areas anticipated to be hard to enumerate in 2020. The mapper application also displays additional demographic and economic characteristics that may cause some block groups to be hard to count. For more information on active efforts to target hard-to-count populations, visit the local Complete Count Committee webpage.

BROWARD'S DIGITAL DIVIDE PROGRAM

Broward Municipal Services District (BMSD) partnered with T-Mobile to close the digital divide and empower its residents by connecting families and students that don't currently have Internet connectivity at home through its Digital Divide Pilot Program. Broward County Library now offers free digital tablets for library customers to check out and take home. The Alcatel A30 tablets are available at 21 libraries located throughout Broward County. Creation Stations provide access to tools for small business incubation, computers, virtual reality equipment and state of art technology for the audio and visual art production. Digital Memory Lab is a free, do-it-yourself space for digitizing personal archive collections of audio-visual materials. Broward County libraries provide from all their locations free Wi-Fi Internet access and more than 2,000 public-use computers available for free use based on a reservation system.

ENDNOTES

[i] CPS is one of the oldest, largest, and most well-recognized surveys in the United States sponsored jointly by U.S. Census Bureau and the U.S. Bureau of Labor Statistics. It is the primary source of monthly labor force statistics and is also used to provide information on many of the things that define us as individuals and as a society by adding a set of supplemental questions to the monthly basic CPS questions. Supplemental inquiries vary month to month and cover a wide variety of topics.

[ii] ACS is an ongoing U.S. Census Bureau survey that provides vital information on a yearly basis about our nation and its people. It helps local officials, community leaders, and businesses understand the changes taking place in their communities. It is the premier source for detailed population and housing information about our nation.

[iii] DataFerret is a free online analytical and statistical tool from the U.S. Census Bureau that provides an interface that allows access to multiple federal, state, and local data datasets and variables for instant analysis or for retrieval for use in other software. This free web application enables users to recode variables, create tables, graphs and maps to visualize analytical results, as well as for use in documents and presentations without installing expensive statistical or mapping software.

[iv] CPS began data collection about computers at the national level in 1984 and about Internet access in 1997. Dataferret, a U.S. Census Bureau provided analysis tool, was used, when available, to produce estimates of computers and Internet access in households for Florida and Broward County. Broward County data was first published in 1998.

[v] includes rural counties with a population of 75,000 or less or a county with a population of 125,000 or less which is contiguous to a county with a population of 75,000 or less (Section 288.0656, F.S.).

[vi] "Libraries and the 2020 Census--Vital Partners for a Complete Count": https://www.broward.org/Census2020/Documents/CensusBrief.pdf

TECHNICAL APPENDIX

Percent Households with Internet Access at Home

Year	U.S.	Florida	Broward County
1997	18.0	NA	NA
1998	26.2	26.9	27.8
2000	41.5	43.4	43.7
2001	50.4	52.9	60.2
2003	54.7	55.7	59.8
2007	61.7	64.9	65.7
2009	68.7	71.5	70.3
2010[1]	71.1	74.0	75.0
2011	71.7	74.8	76.4
2012	74.8	77.9	79.4
2013	74.4	75.2	78.1
2014	75.8	76.5	79.5
2015	77.2	78.0	80.7
2016	81.9	81.6	82.7
2017	83.8	83.4	84.7

Sources:

United States: U.S. Census Bureau, Current Population Survey, Internet and Computer Use Supplement; 1997, 1998, 2000, 2001, 2003, 2007, 2009, 2010, 2011, & 2012

Florida & Broward County:

U.S. Census Bureau, Current Population Survey (1998).   Internet and Computer Use Supplement, December 1998, Universe: Households in HESIU10 (Internet service provider); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2000).   Internet and Computer Use Supplement, August 2000, Universe: Households in HESCU8 (Type of Internet access); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2001).   Internet and Computer Use Supplement, September 2001, Universe: Households in HESINT1 (Internet home use); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2003).   Internet and Computer Use Supplement, October 2003, Universe: Households in HESINT2A (Internet home use, type of connection); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2007).   Internet and Computer Use Supplement, October 2007, Universe: Households in HENET3 (Connect to Internet from home); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2009).   Internet and Computer Use Supplement, October 2009, Universe: Households in HENET3 (Connect to Internet from home); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2011).   Internet and Computer Use Supplement, July 2011, Universe: Households in HESC15 (Anyone Use Internet from home); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2012).   Internet and Computer Use Supplement, October 2012, Universe: Households in HENET3 (Does anyone use the Internet from home); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S., Florida, & Broward County:

U.S. Census Bureau, American Community Survey 1-Year Estimates; 2013-2017, Table B28002

Notes:

[1] 2010 data for Florida and Broward County extrapolated using best-fit linear regression analysis by Environmental Protection and Growth Management Department, Planning and Development Management Division

Percent Households with Computer at Home

Year	U.S.	Florida	Broward County
1984	8.2	NA	NA
1989	15.0	NA	NA
1993	22.9	NA	NA
1994	24.3	22.5	NA
1997[1]	36.6	34.8	NA
1998	42.1	39.7	40.0
2000	51.0	50.2	52.6
2001	56.3	56.0	62.3
2003	61.8	61.1	64.2
2007[2]	69.7	67.0	70.8
2009[2]	74.1	75.5	76.2
2010[2]	76.7	78.1	78.5
2011	75.6	78.5	79.4
2012	78.9	81.4	82.2
2013	83.8	84.4	87.1
2014	85.1	85.8	87.8
2015	86.8	87.5	89.7
2016	89.3	90.1	92.6
2017	90.8	91.9	93.3

Sources:

United States: U.S. Census Bureau, Current Population Survey, Internet and Computer Use Supplement; 1984, 1989, 1993, 1994, 1997, 1998, 2000, 2001, 2003, 2007, 2009, 2010, 2011, & 2012

Florida:

U.S. Census Bureau, Current Population Survey (1994).   Internet and Computer Use Supplement, November 1994, Universe: Households in HESQ1 (Computer-ownership); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2012).   Internet and Computer Use Supplement, October 2012, Universe: Households in HESC13 (How many computers in use in this household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

Broward County:

U.S. Census Bureau, Current Population Survey (2012).   Internet and Computer Use Supplement, October 2012, Universe: Households in HENET2 (Number of computers in the household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

Florida & Broward County:

U.S. Census Bureau, Current Population Survey (1998).   Internet and Computer Use Supplement, December 1998, Universe: Households in HESCU1A (Computer in household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2000).   Internet and Computer Use Supplement, August 2000, Universe: Households in HESCU1A (Computer in household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2001).   Internet and Computer Use Supplement, September 2001, Universe: Households in HESC1 (Computer in household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2003).   Internet and Computer Use Supplement, October 2003, Universe: Households in HESC1 (Computer in household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S. Census Bureau, Current Population Survey (2011).   Internet and Computer Use Supplement, July 2011, Universe: Households in HESC13 (How many computers in use in this household); Weight Used: HWHHWGT (Weight-Household). Generated by the author via DataFerrett. URL: http://dataferrett.census.gov/TheDataWeb/index.html (Files generated May 23, 2019).

U.S., Florida, & Broward County:

U.S. Census Bureau, American Community Survey 1-Year Estimates; 2013-2017, Table B28001

Notes:

[1] 1997 data for Florida extrapolated using best-fit linear regression analysis by Environmental Protection and Growth Management Department, Planning and Development Management Division

[2] 2007, 2009, & 2010 data for Florida and Broward County extrapolated using best-fit linear regression analysis by Environmental Protection and Growth Management Department, Planning and Development Management Division