Estimating and Understanding the Language and Communication Needs of the Civilian Labor Force Population[1]

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Abstract
This short monograph estimates the language and communication needs of the civilian labor force population served by the Equal Employment Opportunity Commission (EEOC). We focus on persons with limited English proficiency (LEP) and persons with limited digital connection (LDC). Data from the Public Use Microdata Sample (PUMS) from the 2017 American Community Survey (ACS) were used to produce the estimates and measures of statistical precision. Using descriptive statistics, our estimates revealed a sizable portion of LEP and LDC population in the civilian labor force and an overrepresentation of minorities, foreign borns, older Americans, and people with a disability. We also found that the LEP and LDC population were not distributed uniformly across the 15 EEOC districts. To show this, we identified the top five languages spoken at home among the LEP population in each district. We expect these findings will provide useful evidence-based insights to assist the agency in its outreach efforts.

Key Words: American Community Survey, PUMS, Limited English Proficiency population, digital divide, evidence-based research for policy making

1. Introduction

The U.S. Equal Employment Opportunity Commission (EEOC) is a federal agency that administers and enforces civil rights laws against workplace discrimination. Each year, more than 150,000 individuals contact EEOC with inquiries about discrimination and EEOC receives, on an average, between 80,000 and 90,000 charges annually. In 2012, EEOC implemented its Language Access Plan to reach individuals and groups that speak languages other than English through outreach and education. More recently in 2017, EEOC launched its digital charge system to improve the agency's interaction and responsiveness to the public via digital technology.

In this short paper, we estimate the language and communication needs of the civilian labor force population (CLF) served by the EEOC. We focus on persons with limited English proficiency (LEP) and persons with limited digital connection (LDC). Using descriptive statistics, we demonstrate the estimated LEP and LDC population nationally and by EEOC districts. We identify those who are most likely to be associated

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with these language and technology disadvantages. We compare and discuss various geographic areas, demographic and language groups in some details.

2. Literature and Research

2.1 Population with Limited English Proficiency

In a predominantly English-speaking country, the ability to communicate effectively in English is often linked with success in adjusting to life in America.[1] Some economists suggest that English proficiency is a form of human capital in the workplace.[2-3] People who speak a language other than English at home are less likely to find full-time work and experience lower median earnings, when controlling for full-time or part-time status and personal characteristics that are related to employment and earnings.[4-5] Compared to their counterparts, employed men with LEP are more likely to work in construction and maintenance occupations and employed women with LEP tend to work in service and personal care occupations.[6-7]

A lack of English proficiency is also linked to several health, communication, and social issues. Persons of limited English proficiency often experience substandard health care, poor clinical outcomes, longer hospital stays, and higher rates of hospital readmissions.[8-12] Many report having difficulty in understanding written medical information and doctor's instructions.[13] School children with LEP parents (also known as English Language Learners) frequently lag behind their English-speaking peers academically in math or reading.[14-16]

2.2 Population with Limited Digital Connection

Researchers commonly define the Digital Divide as a gap between those who have access and can use the internet and computers and those who do not and cannot have access to internet. Often, they look at the disparities in motivation, physical skill, and usage of digital access and raise the question "Have new types of inequality increased in the information age?" As computer and internet use become more widespread, they also ask "Does this divide persist, or has it widened?"[17] Research on such questions has found that ethnic minorities, older, less affluent, and less educated people, those people with significant health challenges and disability, and households in rural areas are more likely to experience lower or no access to computers and internet.[18-19]

In the workplace, the diffusion of digital technology is redefining work and transforming the structure of the U.S. labor market. Technology amplifies both opportunity and inequality.[20] It "polarizes" employment and wages.[21] Older generations, for instance, are sometimes portrayed as digital immigrant who do not speak or speak with an accent in the language of the new information and technological world.[22-23] Phrases like "digital native" and "digital proficient" are commonplace as a required qualification in job announcements, especially in the media and technology industries.[24-25]

3. Data and Measurements

Data from the Public Use Microdata Sample (PUMS) from the 2017 American Community Survey (ACS) are used to produce estimates of the LEP and LDC population and measures of statistical precision. Along with weighted estimates, we also provide ACS sample sizes and three measures of statistical accuracy: standard error (SE), margin of error at 95-percent confidence level (MOE), and coefficient of variation (CV), which is a reliability measure of the estimates. Sample size is the number of observations in the ACS PUMS

data set before we apply appropriate weights to estimate a population. A larger sample size is usually associated with lower sampling error.

We measure the Limited English Proficiency population through two self-report questions in the 2017 ACS survey. Respondents were asked "Does this person speak a language other than English at home?" If the answer was "yes", respondents were subsequently asked: "How well does this person speak English?" Respondents who reported speaking English other than "very well" are categorized as person with Limited English Proficiency. This definition is commonly used by federal government agencies and some state and local governments.

Fig. 1. 2017 ACS Question 14 on Language Skills

Item b in Question 14 is further used to estimate the most common home languages among the LEP population. Respondents were asked to write in "What is this language?" that they spoke at home other than English. In 2016, the U.S. Census Bureau redesigned the question and established a language list which consists of over 380 detailed codes to capture a wide array of world languages for its surveys.[26] We use that list for our extended analysis as shown in Appendix C.

We use the term Limited Digital Connection to describe the segment of the civilian labor force that resided in households which did not have internet access in 2017. We derive our LDC measurements from a household question (Figure 2). Household respondents were asked "At this house, apartment, or mobile home, do you or any members in this household have access to the internet?" They had three options to choose for their answer. If they did not check "Yes, by paying a cell phone company or internet service provider", we categorize the household as one with limited internet use and treat each individual member in such household as persons with Limited Digital Connection. Person-level weights were applied to produce the LDC population estimates.[27]

Fig. 2. 2017 ACS Questions 9 on Household Internet Access
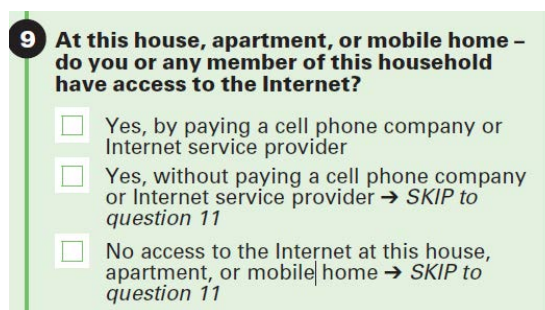
Title VII of the Civil Rights Act of 1964 outlawed discrimination in the workplace based on race, sex, color, disability, age, and national origin. Since Title VII was enacted immigrants, women, and older workers have increasingly entered the workforce.[28] Our estimates and comparisons in this paper focus on seven race/ethnicity groups: White, Black, Hispanic, Asian, American Indian, Other, and Two or More Races (TOMR); two groups of gender: male and female; two groups of disability: people with any self-reported disability and people without; two age groups: workers under 40 and over 40 years old; and two groups of nativity: native born and non-native born.

In addition to national estimates, we also produce and examine the LEP and LDC estimates by EEOC districts. EEOC has fifteen district offices in local communities throughout the country to carry out its mission. As ACS does not contain district level geography in the data, we construct a crosswalk of puma-fip5-district, using an approximation method (see EEOC district maps in Fig. 3 and Fig. 4).

In addition to the population estimate, which is the weighted count of LED or LDC persons observed in our study population, we sometimes provide prevalence rate for comparison purposes. Prevalence rate is a proportion of the estimated population as a percentage of the CLF population. Sometimes we refer it as LEP proportion or LDC proportion in our discussion.

Table 1 describes the target population for this study: the approximately 162.3 million non-institutionalized civilian labor force age 16 and over, which included about 150.7 million employed and at work, 3.2 million employed with a job but not at work, and over 8.4 million unemployed.

Table 1. Estimated Civilian Labor Force (CLF) Population in this Study, 2017

	Sample size	Weighted Number of persons (n)	Percent of persons (%)	SE	MOE	CV
Civilian employed, at work	1,426,296	150,661,224	92.85	96,111	187,416	0.064
Civilian employed, with a job but not at work	28,524	3,163,550	1.95	24,359	47,743	0.769

Unemployed	72,663	8,430,150	5.20	43,049	84,376	0.511
TOTAL	1,527,483	162,254,924	100.0	98,142	192,357	0.061

SE, standard error; CI, confidence Interval; CV, coefficient of variation; MOE, margin of error at 95% CI; Data Source: American Community Survey 2017 Public Use Microdata Sample.

4. Results

Table 2 contains our estimates of the LEP and LDC populations and proportions, along with three corresponding measures of statistical precision and sample size. In 2017, over 14.3 million or about 8.8 percent of the CLF population spoke a language other than English at home and spoke English "less than very well". The weighed estimate of the size of the LEP population is derived from a sample of 112,326. We are 95 percent confident that this estimate ranges between 14,146,406 and 14,354,378. Nationwide, there were approximately 14.2 million people who lived in the houses without internet access and they made up about 8.75 percent of the total CLF population. Given the margin of error in our estimates, we are 95 percent confident that the true size of the LDC population ranges from 14.0 million to 14.4 million. The relatively low CVs associated with our estimates of LEP (0.37) and LDC (0.69) indicate that our population estimates have achieved desirable accuracy.

Table 2. Estimates of LEP and LDC Population and Proportion in CLF population, 2017

	Sample Size	Weighted Number of Persons (N)	Weighted Percent of CLF (%)	SE	MOE	CV
Person Speaking English Less Than Very Well (LEP)	112,326	14,250,392	8.78	53,326	103,986	0.37
Person with Limited Digital Connection (LDC)	117,144	14,194,847	8.75	98,134	191,361	0.69

SE, standard error; CI, confidence Interval; CV, coefficient of variation; MOE, margin of error at 95% CI; Data Source: American Community Survey 2017 Public Use Microdata Sample.

Table 3 highlights the demographic characteristics of the LEP population. Fifty-eight percent of the 14.3 million LEP persons was male. Workers over 40-years-old outnumbered their younger counterparts by a similar ratio (3 males for every two females). Among race and ethnic groups, two-in-three LEPs were Hispanic (65 percent or 9.3 million) and one-in-five, identified as Asian (over 20 percent or 2.9 million). A large majority of LEP population was foreign born (nearly 12.5 million and at almost 88 percent) while only a small fraction was identified as having a disability (about 5 percent).

Table 3. Selected Characteristics of CLF Population with LEP, 2017

	Sample Size	Number of LED Persons (N)	Percent of LED Persons (%)	SE	MOE

TOTAL	112,326	14,250,390	100.0	53,326	103,986
Sex					
Male	63,049	8,269,800	58.0	38,518	75,111
Female	49,277	5,980,592	42.0	29,069	56,684
Age					
40 and under	41,456	5,864,441	41.2	40,157	78,308
Over 40	70,870	8,385,951	58.8	34,885	68,025
Race and Ethnicity					
White	12,142	1,303,040	9.1	16,794	32,749
Black	3,972	614,502	4.3	14,910	29,074
Hispanic	67,608	9,260,518	65.0	93,221	84,280
Asian	26,817	2,877,020	20.2	19,990	38,980
Am. Indian	323	16,826	0.1	1,455	2,838
Other	533	80,543	0.6	5,705	11,126
TOMR	931	97,943	0.7	4,081	7,957
National Origin					
Native	15,203	1,758,418	12.3	18,497	36,070
Foreign-born	97,123	12,491,974	87.7	55,960	109,121
Disability Status					
With a disability	5,874	658,090	4.6	9,588	18,696
Without a Disability	106,452	1,3592,302	95.4	55,484	108,194

SE, standard error; CI, confidence Interval; MOE, margin of error at 95% CI;

Table 4 displays our estimates of the top five most common languages spoken at home by the LEP population. Nationally two-in-three or 9.5 million LEP population spoke Spanish at home. As shown in Appendix C, some EEOC districts had relatively higher shares of Spanish speakers, namely, Dallas (86 percent) and Houston (81 percent). Also at the top list were Chinese, 4 percent of the LEP population, Vietnamese, 3.6 percent, Korean, 2.0 percent, and Tagalog, 1.6 percent. Overall, these five languages were the home language for more than 11 million LEP people in 2017.

Table 4. Top Five Foreign Languages Spoken at Home by the LEP Population, 2017

	Number of LEP (N)	Percent of LEP (%)
Spanish	9,470,805	66.5
Chinese	576,330	4.0
Vietnamese	515,433	3.6
Korean	286,189	2.0
Tagalog	226,741	1.6

Data Source: American Community Survey 2017 Public Use Microdata Sample.

Table 5 shows the demographic characteristics of the LDC population at a national level. Among the 14.2 million LDC population, over 7.8 million were male (55.1 percent). LDC persons tended to be older as about 7.8 million were over 40 years old (54.8 percent). Among the seven race/ethnicity groups, 6.9 million Whites comprised the largest share of LDC at 48.7 percent, and one-in-four LDC persons were Hispanic(25.6 percent). A large

majority of the LDC were native born (about 78.7 percent or 11.2 million). Only a small share (9.8 percent) of LDC persons had self-reported disabilities (9.8 percent).

Table 5. Selected Characteristics of CLF Population with LDC, 2017

	Sample Size	Number of LDC Person (N)	Percent of LED Person (%)	SE	MOE
Totals	117,144	14,194,874	100.0	98,134	191,361
Sex					
Male	63,429	7,818,033	55.1	59,654	116,326
Female	53,715	6,376,814	44.9	48,999	95,548
Age					
40 and under	44,891	6,421,811	45.2	62,482	121,840
Over 40	72,253	7,773,036	54.8	52,342	102,068
Race and Ethnicity					
White	65,840	6,913,939	48.7	59,098	115,240
Black	18,189	2,738,642	19.3	32,049	62,495
Hispanic	24,358	3,646,553	25.7	41,104	80,152
Asian	3,400	428,040	3.0	11,328	22,090
Am. Indian	3,111	180,305	1.3	5,578	10,876
Other	498	74,482	0.5	5,240	10,219
TOMR	1,748	212,886	1.5	7,886	15,378
National Origin					
Native	96,812	11,165,164	78.7	80,788	157,536
Foreign-born	20,332	3,029,683	21.3	36744	71,651
Disability Status					
With a disability	13,274	1,394,462	9.8	16,805	32,771
Without a disability	103,870	12,800,385	90.2	92,034	179,466

SE, standard error; CI, confidence interval; MOE, margin of error at 95% CI;

In 2017, LEP population varied substantially from district to district. Table 6 displays population estimates of the five districts with the highest LEP counts. About 9.4 million or two-thirds of the total 9.4 million LEP persons were concentrated in five districts: Los Angeles (19.3 percent), New York (17.3 percent), San Francisco (10.9 percent), Dallas (9.4 percent), and Miami (9.2 percent). By contrast, less than 1 percent of the LEP persons lived in EEOC's Birmingham District and 1.2 percent in the Memphis District (see Appendix A).

Table 6. Top Five EEOC Districts with High Shares of National LEP population, 2017

	LEP Number (N)	LEP Percent of National LEP (%)	Total CLF (N)
Los Angeles	2,750,845	19.3	14,663,292
New York	2,461,416	17.3	21,489,929
San Francisco	1,547,002	10.9	14,879,638

Dallas	1,335,395	9.4	10,025,490
Miami	1,308,138	9.2	9,466,162
Sum of 5 District	**9,402,796**	**66.1**	**70,524,511**

Data Source: American Community Survey 2017 Public Use Microdata Sample.

Meanwhile, a larger LEP population in a district often coincides with a higher LEP proportion in that district. For example, the largest share of the national LEP population resides in the Los Angeles District (2.8 million), and the district also exhibits the highest concentration of LEP persons as a proportion of a district CLF population (18 percent) as shown in Appendix D. In all, all top five districts with large LEP population listed in Table 6 have LEP proportions well above the national average rate of 8.8 percent.

Unlike the LEP distribution pattern, districts with larger LDC population size were not necessarily higher in the LDC prevalence rate. To illustrate the difference, Table 7 lists the top five EEOC districts with our LDC estimates ranked separately by population size and by prevalence rates in proportion to district CLF population. For instance, New York District had the largest LDC population (1.5 million), but Memphis District had the highest LDC rate (18.8 percent). In 2017, the LDC population of all five districts listed in Table 7 surpassed one million people. Almost 1-in-5 residents in Memphis District and at least 1-in-10 residents in other four districts reported that they did not have internet subscription at home.

**Table 7**. Top Five EEOC District with Higher LDC Population and Prevalence, 2017

Rank	LDC Number (N)	LDC Percent of District CLF (%)
1	New York (1,509,812)	Memphis (18.76)
2	Chicago (1,189,166)	Birmingham (12.44)
3	Philadelphia (1,176,896)	Dallas (11.51)
4	Dallas (1,153,650)	Miami (10.81)
5	Los Angeles (1,146,124)	Houston (10.72)
National Totals	**14,194,847**	**8.75**

Data Source: American Community Survey 2017 Public Use Microdata Sample.

Maps in Figure 3 and Figure 4 display the LEP and LDC prevalence rates by EEOC districts based on the size of their civilian labor force. As illustrated in Figure 3, LEP rates ranged widely from 19 percent in Los Angeles to less than 3 percent in Birmingham and Indianapolis. Districts along the West and East coasts and in the Southwest areas, where immigrants traditionally settled, show higher LEP prevalence rates. The LDC prevalence rates in Figure 4 had a slightly narrower range from 14 percent in Memphis District to 6 percent in San Francisco District. Higher LDC prevalence rates are mostly found in the Southeast part of the country, which has smaller metropolitan areas and larger rural populations. Overall, LDC size and rate were not as highly concentrated as that of LEP among the 15 EEOC districts in 2017.
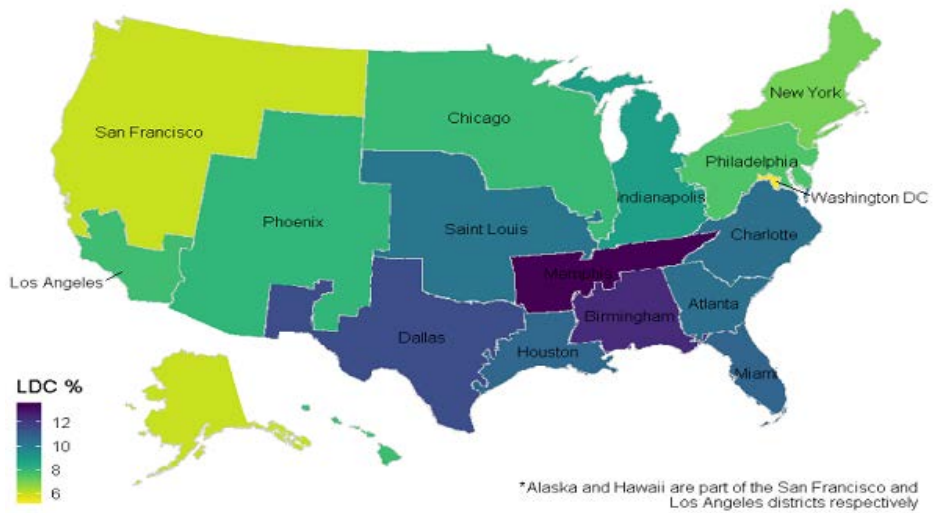
Fig 3. Geographic Illustration of the District LEP Prevalence as Percent of CLF, 2017
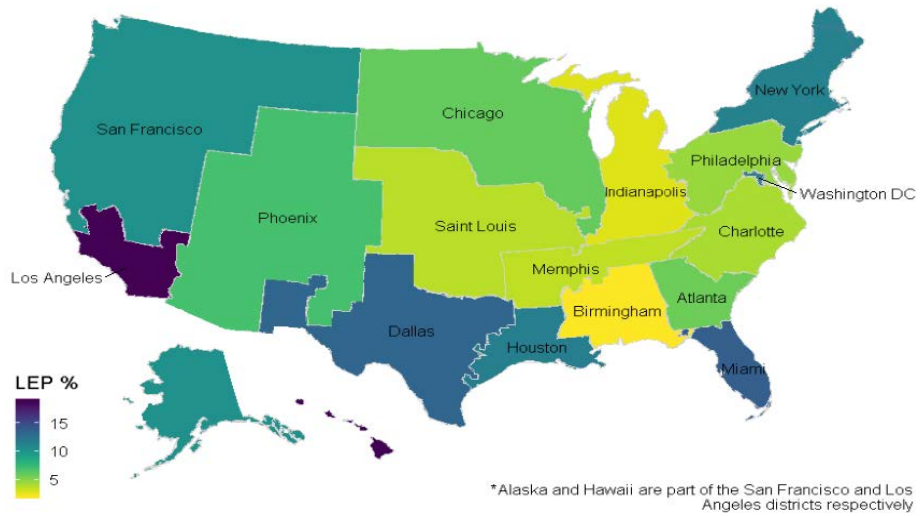
Data Source: American Community Survey 2017 Public Use Microdata Sample.

Fig. 4. Geographic Illustration of the District LDC Prevalence as Percent of CLF, 2017

Data Source: American Community Survey 2017 Public Use Microdata Sample.

5. Summary

In all, our findings in this paper demonstrate there were sizable segments among of the U.S. CLF with Limited English Proficiency and Limited Digital Connection which were concentrated in particular EEOC districts. A significant majority of the LEP population in 2017 spoke Spanish at home and did not speak English very well. Many of them appear to fall into categories of vulnerable populations under U.S. workplace discrimination laws: minorities, people over forty, disabled, and foreign-born workers.

The estimated 14.4 million LEP population was not evenly dispersed among the fifteen EEOC reginal districts. It was heavily concentrated in the Western and Eastern districts and in some regions in the Southwest. The districts of Los Angeles, New York, San Francisco, Dallas, and Miami were all homes to well over one million LEP persons. LEP persons may have difficulty in understanding legal language and their rights to equal employment, and many may need language assistance to communicate with the EEOC. People with LEP were highly diverse with relatively higher proportions of foreign-born persons, individuals who identified as Hispanic or Asian, workers 40-year-over, and, interestingly, male. Without adequate language assistance their equal access to EEOC resources and services may be challenged.

The estimated 14.2 million LDC population was also concentrated in a few EEOC districts. But it showed a different pattern of concentration. In some districts we observe greater numbers of LDC persons and in other districts we see high rates of the LDC population as a percent of the district CLF. People without home internet access may have to rely on public resources or travel some distance to access internets. Some may need technical assistance with filing workplace discrimination charges online. Many may still require or prefer conventional or low-tech means of communication at EEOC district offices. Like the LEP population, people with LDC were more commonly in male, ages 40-years-and-over, and White and Hispanic. Being technological disadvantaged, this population may be limited in their choices in how to communicate with the EEOC and thus have less access as a result.

6. Conclusion

This research addresses a long-standing challenge for the EEOC to produce accurate, reliable, and timely estimates on characteristics of the EEOC service population. This paper underscores the importance that EEOC provide language assistance and alternative modes of communication by estimating and identifying the size and prevalence of the national LEP and LDC populations and by describing the extent to which these language and technology disadvantages exist among several vulnerable segments in the CLF population.

This research may inform EEOC staff in each district and reginal offices by estimating and detailing demographic and geographic disparities of the LEP and LDC groups within EEOC districts. This paper informs and prepares EEOC staff and entities to best position services to address the particular language and communication needs of workers that they are likely to encounter.

Acknowledgements

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Appendix A

Estimates of Limited English Proficiency Population by EEOC Districts,2017

	Sample Size	Weighted Number of Persons (N)	Weighted Percent of Persons (%)	SE	MOE	CV
ATLANTA	2,490	328,863	2.31	6,336	12,355	1.93
BIRMINGHAM	668	78,423	0.55	3,680	7,176	4.69
CHARLOTTE	3,028	401,388	2.82	7,867	15,341	1.96
CHICAGO	6,106	902,428	6.33	13,250	25,838	1.47
DALLAS	10,760	1,335,495	9.37	14,463	28,202	1.08
HOUSTON	4,949	716,363	5.03	11,059	21,565	1.54
INDIANAPOLIS	2,657	365,645	2.57	8,834	17,227	2.42
LOS ANGELES	24,553	2,750,845	19.3	1,9397	37,825	0.71
MEMPHIS	1,316	180,201	1.26	55,230	10,783	3.07
MIAMI	10,098	1,308,138	9.18	15,734	30,682	1.20
NEW YORK	18,931	2,461,416	17.27	22,717	44,298	0.92
PHILADELPHIA	5,400	721,424	5.06	12,516	24,406	1.73
PHOENIX	4,857	620,128	4.35	10,395	20,271	1.68
SAINT. LOUIS	2,009	291,005	2.04	7,899	15,404	2.71
SAN FRANCISCO	12,774	1,547,002	10.86	17,184	33,508	1.11
WASHINGTON FIELD OFFICE	1,730	241,628	1.70	8,094	15,783	3.35
TOTAL	**112,326**	**14,250,392**	**100.0**	**53,326**	**103,986**	**0.374**

SE, standard error; CI, confidence Interval; CV, coefficient of variation; MOE, margin of error at 95% CI;   Data Source: American Community Survey 2017 Public Use Microdata Sample.

Appendix B

Estimates of Limited Digital Connection Population by EEOC Districts, 2017

	Sample Size	Weighted Number of LDC Person (N)	Weighted Percent of LDC Person (%)	SE	MOE	CV
ATLANTA	4,612	593,251	4.18	12,333	24,049	2.08
BIRMINGHAM	3,870	464,504	3.27	9,954	19,410	2.14
CHARLOTTE	7,956	1,002,212	7.06	19,508	38,041	1.95
CHICAGO	10,665	1,189,166	8.38	18,135	35,363	1.52
DALLAS	9,075	1,153,650	8.13	18,274	35,635	1.58
HOUSTON	4,819	661,188	4.66	16,373	31,926	2.48
INDIANAPOLIS	9,845	1,122,623	7.91	17,989	35,078	1.60
LOS ANGELES	9,116	1,146,124	8.07	16,935	33,023	1.48
MEMPHIS	5,233	657,747	4.63	14,233	27,754	2.16
MIAMI	7,093	1,023,597	7.2	16,535	32,244	1.62
NEW YORK	12,153	1,509,812	10.64	22,702	44,269	1.50
PHILADELPHIA	10,325	1,176,896	8.29	17,636	34,389	1.50
PHOENIX	6,472	719,351	5.07	16,163	31,519	2.25
SAINT LOUIS	7,174	777,616	5.48	16,497	32,168	2.12
SAN FRANCISCO	7,760	891,923	6.28	18,622	36,312	2.09
WASHINGTON FIELD OFFICE	706	105,187	0.74	6,446	12,569	6.13
TOTAL	**117,144**	**14,194,847**	**100.0**	**98,134**	**191,361**	**0.69**

SE, standard error; CI, confidence Interval; CV, coefficient of variation; MOE, margin of error at 95% CI; Data Source: American Community Survey 2017 Public Use Microdata Sample.

Appendix C

The Top Five Non-English Language Spoken at Home for LEP Population
by EEOC Districts, 2017

	TOP 1 (%)	TOP 2 (%)	TOP 3 (%)	TOP 4 (%)	TOP 5 (%)
U.S.	Spanish (66.5)	Chinese (4.0)	Vietnamese (3.6)	Korean (2.0)	Tagalog (1.6)
ATLANTA	Spanish (65.3)	Vietnamese (6.1)	Korean (3.9)	Chinese (3.0)	French (1.9)
BIRMINGHAM	Spanish (64.4)	Vietnamese (8.6)	Korean (4.3)	Chinese (3.6)	French (1.8)
CHARLOTTE	Spanish (69.9)	Vietnamese (3.8)	Chinese (3.0)	Korean (1.7)	Arabic (1.7)
CHICAGO	Spanish (58.6)	Polish (5.4)	Chinese (2.8)	Vietnamese (2.7)	Hmong (2.4)
DALLAS	Spanish (86.4)	Vietnamese (2.6)	Chinese (.93)	Arabic (.92)	Korean (.84)
HOUSTON	Spanish (81.1)	Vietnamese (6.0)	Chinese (2.8)	Arabic (.82)	French (.80)
INDIANAPOLIS	Spanish (46.0)	Arabic (8.2)	Chinese (3.8)	French (3.2)	Vietnamese (2.8)
LOS ANGELES	Spanish (72.2)	Vietnamese (4.4)	Korean (3.3)	Tagalog (3.0)	Chinese (3.0)
MEMPHIS	Spanish (68.8)	Arabic (4.5)	Vietnamese (4.5)	Chinese (2.7)	Somali (1.3)
MIAMI	Spanish (79.0)	Haitian (8.1)	Portuguese (2.1)	Vietnamese (1.6)	Chinese (1.1)
NEW YORK	Spanish (54.0)	Chinese (7.9)	Portuguese (3.7)	Haitian (3.1)	Russia (2.9)
PHILADELPHIA	Spanish (51.5)	Chinese (5.3)	Vietnamese (3.6)	Korean (2.9)	Russian (2.3)
PHOENIX	Spanish (78.5)	Vietnamese (3.3)	Chinese (1.9)	Nepali (1.1)	Korean (.93)
SAINT LOUIS	Spanish (66.0)	Vietnamese (7.3)	Chinese (3.6)	Korean (2.1)	Arabic (1.1)
SAN FRANCISCO	Spanish (53.7)	Chinese (7.5)	Vietnamese (6.3)	Cantonese (4.6)	Tagalog (4.4)
WASHINGTON FIELD	Spanish (57.4)	Korean (6.2)	Vietnamese (5.2)	Amharic (4.5)	Chinese (3.4)

Data Source: American Community Survey 2017 Public Use Microdata Sample.

Appendix D

LEP and LDC Prevalence Rates by District CLF, 2017

	Estimate of District CLF (N)	LEP Prevalence by CLF (%)	LDC Prevalence by CLF (%)
ATLANTA	5,674,460	5.8	10.5
BIRMINGHAM	3,734,327	2.1	12.4
CHARLOTTE	9,569,838	4.2	10.5
CHICAGO	15,023,159	6.0	7.9
DALLAS	10,025,490	13.3	11.5
HOUSTON	6,168,265	11.6	10.7
INDIANAPOLIS	12,637,700	2.9	8.9
LOS ANGELES	14,663,292	18.8	7.8
MEMPHIS	4,906,209	3.7	13.4
MIAMI	9,466,162	13.8	10.8
NEW YORK	21,489,929	11.5	7.0
PHILADELPHIA	15,559,487	4.6	7.6
PHOENIX	8,896,270	7.0	8.1
SAINT LOUIS	7,587,737	3.8	10.3
SAN FRANCISCO	14,879,638	10.4	6.0
WASHINGTON FIELD OFFICE	1,972,961	12.3	5.3
NATIONAL	**162,254,924**	**8.78**	**8.75**

Data Source: American Community Survey 2017 Public Use Microdata Sample.