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Learning about Homelessness in the U.S. Using Linked Administrative and Survey Data

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Disclaimer

- Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the U.S. Census Bureau. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004.

Background

- Part of Comprehensive Income Dataset (CID) project which combines survey and admin data to improve income estimates
- Official poverty statistics and extreme poverty studies are not intended to represent people experiencing homelessness
- People experiencing homelessness not covered or sharply under-represented in most surveys
  - Not generally surveyed in CPS and SIPP; ACS includes only those in shelters
- We use restricted survey and administrative data to:
  - improve income estimates
  - understand survey coverage
  - learn about homeless population

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What we hope to learn about the homeless

- Population Estimates and Survey Coverage
  - Population estimates and their differences across data sources
  - Coverage in available data sources
- Population Characteristics
  - Characteristics including, age, gender, race, education, veteran status, and migration
- Income and Program Receipt
  - Employment and earnings in formal labor market
  - Safety net program receipt
  - Low material well-being permanence or transience among those who experience homelessness
  - Implications for official statistics of the omission of those experiencing homelessness

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Challenges to studying homelessness

- People experiencing homelessness are difficult to survey
  - Reasons include mobility, lack of a permanent residence, tenuous attachment to living quarters, not wanting to be found, pretending to be housed (Glasser, Hirsch, and Chan 2014) or cognitive challenges
  - Raises questions about the representativeness and comprehensiveness of any data source
- There are many different definitions of homelessness
  - We focus on individuals residing in emergency or transitional shelters ("sheltered homeless") and those whose primary nighttime residence is a public or private place not meant for human habitation ("unsheltered homeless")
  - Literature is also concerned with precariously housed and "doubled up"; our sources are not designed to address these questions (Lee, Tyler, and Wright 2010)

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Public sources of counts or estimates

- HUD issues an Annual Homeless Assessment Report (AHAR) to Congress
  - Provides nationwide estimates of homelessness, including service-use patterns, the capacity to house homeless persons, and some information about the characteristics of people experiencing homelessness (although limited relative to the ACS)
- 2010 Census Special Report on the Emergency and Transitional Shelter Program described the geographic distribution of the shelter population and provided demographic characteristics (Smith, Holmberg, and Jones-Puthoff 2010)

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Other sources of counts or estimates

- Besides AHARs and Census report, the best nationally representative study on homelessness is more than two decades old
  - The 1996 National Survey of Homeless Assistance Providers and Clients (NSHAPC) provided detailed demographic and economic characteristics (Burt et al. 1999)
- Localized studies offer a wealth of information but may not be generalizable
  - Some local homeless services administrative units (Continuums of Care, or CoCs) publish their own reports analyzing shelter use databases
  - Some research using administrative databases in a handful of major cities (Culhane 1994, Culhane et al. 2007, Metraux et al. 2018)

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Bringing new data and methods to bear

- Our approach takes advantage of large samples that offer a guide to national homeless patterns, including the unsheltered
  - To date, very few studies on homelessness use the Decennial Census and ACS
- We rely on accurate administrative data as well as self-reports
- By linking tax and program data, we get a more detailed picture of situation of those experiencing homelessness including longitudinal information

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Population Estimates and Survey Coverage

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Census Bureau Data

- 2010 Decennial Census
  - Enumerated individuals at emergency and transitional shelters, as well as unsheltered individuals in soup kitchens, regularly-scheduled mobile food vans, and targeted non-sheltered outdoor locations (TNSOLs)
  - Enumeration frame developed by internet research and querying local officials, followed by validation and advance visits
- American Community Survey
  - Collects micro-level data on individuals in emergency and transitional shelters since 2006
  - Draws on the shelter list from the Decennial, which was expanded starting in 2011

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HUD Local/Administrative Data

- Homeless Management Information System (HMIS) Aggregated Data
  - HMIS data, maintained by CoCs, provides unduplicated data for individuals experiencing homelessness over a period of time and is extrapolated to form national estimates
- HMIS Micro-Data
  - The CID project has access to linked HMIS data from Los Angeles and Houston, including dates of shelter entry and exit
- HUD Point-in-Time Count (PIT)
  - CoCs conduct annual counts of sheltered and unsheltered homeless on one evening in January
  - PIT counts of the shelter homeless include domestic violence shelters

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Comparison of Data Sources

	2010 Decennial	ACS	HMIS National Estimates	HMIS Micro-Data	HUD PIT
Coverage	National	National – based on Decennial shelter list.	National – Shelters receiving federal funding.	Shelters w/ federal funding; currently L.A. and Houston	National. Includes domestic violence.
Inclusion of Unsheltered	Yes	No	No	No	Yes
Years	2010	2006-2016	2007-2018	2004-2014 (L.A.) 2004-2015 (Houston)	2007-2018
Public Availability	Aggregate data is available in Census Special Report.	Publicly available data do not identify the homeless.	Aggregate data is in HUD's AHAR report to Congress.	Some CoCs publish local reports. Micro-data restricted.	Aggregate data is in HUD's AHAR report to Congress.
Ability to Link	Yes	Yes	No	Yes	No (no PII)
Seasonality	Conducted March 29-31, 2010	Throughout the year	October-September	All shelter use in the given time frame	One night in January; varies by year

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Comparison of Data Sources

	2010 Decennial	ACS	HMIS National Estimates	HMIS Micro-Data	HUD PIT
Time Frame	Cross-section of individuals experiencing homelessness	Called "period estimates" by the Census; approximately point-in-time estimates	Anyone who experienced homelessness in a given time period	Anyone who experienced homelessness in a given time period	Cross-section of individuals experiencing homelessness
Methodology Notes	Subjects asked whether they had usual home elsewhere; de-duplication attempted.	Post-2010, whole person records imputed into not-in-sample GQs.	Extrapolates to non-HMIS shelters to form national estimates.	Data quality issues included incomplete reporting of shelter spell start/end dates.	Methodology varies by CoC using a variety of HUD-approved methods.
Representative-ness	Unsheltered counts may not be complete (see 2010 Census Special Report). Doesn't include all HMIS shelters.	Uses MAF as basis for sampling. Frame expanded after 2010 Decennial. Doesn't include all HMIS shelters.	Only federally funded shelters required to report; some shelters report voluntarily.	Ratio of HMIS-covered beds to total beds varies by year and CoC; median coverage rate 80-85% in most years.	PIT counts are run by local CoCs. Quality of count may vary by CoC.

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Administrative Income/Resource Data

- We link these sources using PIKs to the following longitudinal administrative data:
  - Taxable Income (IRS 1040s, W2s, 1099-Rs)
  - Supplemental Nutrition Assistance Program (SNAP)
    - Illinois, Indiana, New York, New Jersey, and Tennessee
  - Medicare and Medicaid enrollment
  - Housing assistance (HUD PIC and TRACS)
  - Birth and death dates (Numident)

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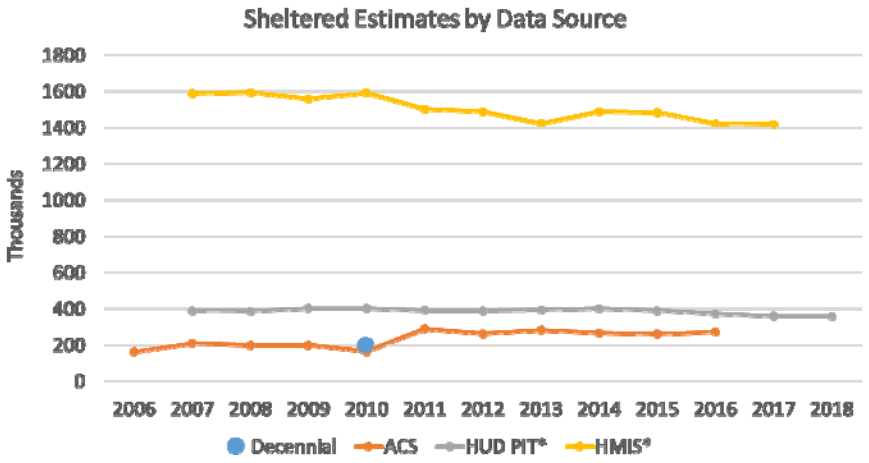
Overall Population Estimates: Sheltered



Sources: 2007-2018 Annual Homelessness Assessment Reports, 2006-2016 ACS, 2010 Decennial Census.
*Indicates data obtained from publicly available sources.

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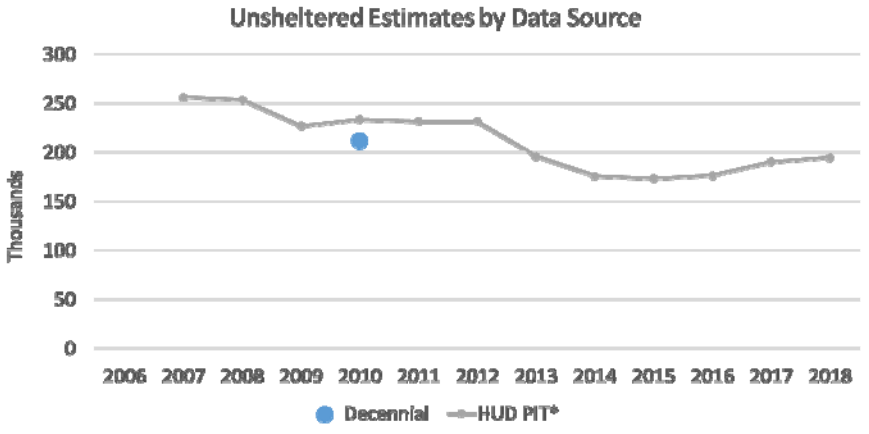
Overall Population Estimates: Unsheltered



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Why Sources Differ: Time Frame

- Person-weighted characteristics weight equally anyone who experienced a shelter stay in a given year
  - Approximated by characteristics from period-prevalent data source, like HMIS
- Day-weighted characteristics are weighted by the number of days an individual spent in a shelter in a given year
  - Approximated by characteristics from a point in time data source, like Decennial, ACS, or PIT
- Some differences – e.g. share under 18, share female in Houston – but fairly similar

HMIS Sheltered Homeless Characteristics Under Different Weighting Schemes

	Los Angeles (2004-2014)		Houston (2004-2015)	
	Person-Weighted	Day-Weighted	Person-Weighted	Day-Weighted
White	43%	42%	35%	34%
Black	47%	48%	60%	63%
Under 18	13%	13%	21%	26%
Female	34%	36%	40%	49%
Hispanic	29%	30%	12%	11%

Sources: 2004-2014 LA CoC HMIS Data, 2004-2015 Houston CoC HMIS Data

Note: The Los Angeles CoC includes Los Angeles county excluding Pasadena, Long Beach, and Glendale. The Houston CoC encompasses Houston, Harris, Fort Bend, and Montgomery counties. We restrict the HMIS data to emergency and transitional shelters, and we drop HMIS observations with no entry date, no exit date, or neither. When the entry date equals the exit date we count these as one-day spells. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004.

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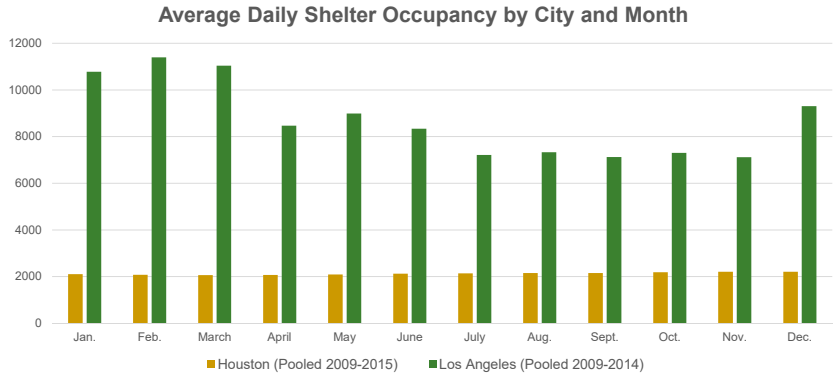
Why Sources Differ: Seasonality



Sources: 2009-2015 Houston CoC HMIS Data, 2009-2014 LA CoC HMIS Data

Note: Houston CoC encompasses Houston, Harris, Fort Bend, and Montgomery counties. The Los Angeles CoC encompasses shelters in Los Angeles County excluding Glendale, Long Beach, and Pasadena. Figure displays occupancy in emergency and transitional shelters only, and we drop observations with no entry date, no exit date, or neither. When the entry date equals the exit date we count these as one-day spells. Average daily shelter occupancy is computed by summing up the person-days of shelter stays in a given city and month over the multi-year period, and then dividing by the number of days belonging to that month over the multi-year period. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004.

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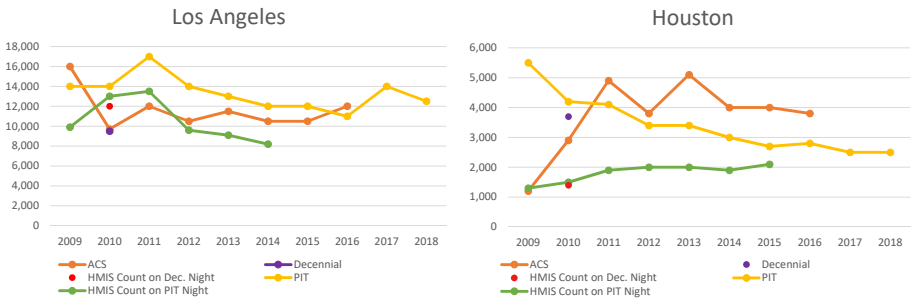
Why Sources Differ: Coverage

Sheltered Homeless Counts by Data Source



- Completeness of data sources appears to vary geographically
  - In L.A., PIT count consistently higher than ACS
  - In Houston, ACS consistently higher
- Planned but not implemented: link the Decennial to HMIS micro-data to estimate coverage of Decennial homeless in HMIS and vice versa

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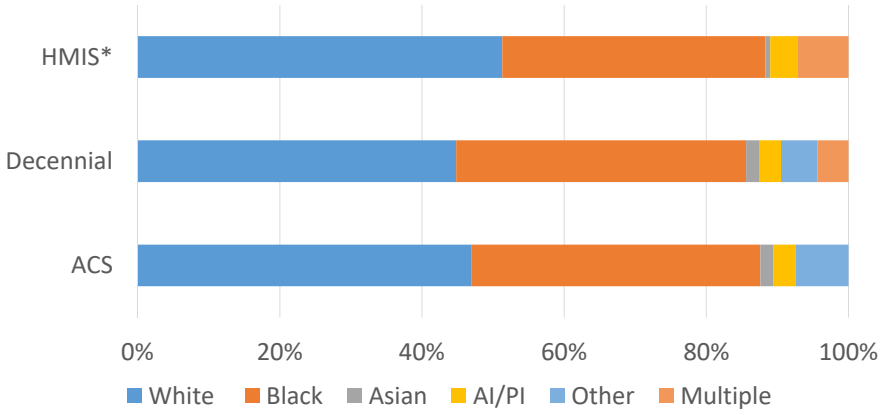
Sheltered Homeless Characteristics

Race (Hispanic and Non-Hispanic) by Data Source



Sources: 2010 American Community Survey, 2010 Decennial Census, 2010 Annual Homelessness Assessment Reports to Congress One-Year Estimates of Shelter Homelessness . * Indicates data from publicly available sources.

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Sheltered Homeless Characteristics

- Share Hispanic and male also consistent across data sources
  - About 17% Hispanic
  - About 62% male
- Sheltered homeless slightly younger in HMIS data
  - Share under 18 is 22% in HMIS, 20% in Decennial, 15% in ACS
  - Modal age category in all sources is 31-50 years (about 36% of sheltered homeless)

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Population Characteristics

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Literature on demographics

- Despite difficulties of studying people experiencing homelessness, several demographic patterns have emerged in the literature:
  - Blacks are overrepresented among those experiencing homelessness, especially shelter homeless and people in families (Burt et al. 2001, AHAR 2007-2018, O'Flaherty 2019)
  - Most single homeless adults are male; most homeless adults in families are female (Metraux et al. 2018, AHAR 2007-2018)
  - Veterans are disproportionately represented, but their share has declined substantially since 2010 (O'Flaherty 2018, AHAR 2018)
    - 8.6% of homeless individuals in the 2018 PIT were veterans, compared to 11.7% in 2010
  - Mixed evidence regarding the "paradox" of infrequent homelessness among Latinos (Conroy and Heer 2003)
  - Homelessness is more common in urban settings than in rural, but has been becoming more suburban in recent years (Lee, Tyler, and Wright 2010)

Demographics relative to comparison groups

	Sheltered Homeless		Single Poor Non-GQ		Non-GQ		NSHAPC (1996)*
All Ages	Mean	SE	Mean	SE	Mean	SE	Mean (Ages 17+)
Age (Years)							
<5	5.8	(0.87)	12.3	(0.22)	6.8	(0.05)	-
5-17	9.6	(1.32)	25.9	(0.29)	17.9	(0.06)	1
18-24	11.1	(1.02)	12.5	(0.25)	9.2	(0.05)	11
25-44	30.2	(1.63)	23.5	(0.28)	26.6	(0.08)	63
45-64	39.9	(2.13)	17.1	(0.23)	26.6	(0.08)	23
>64	3.5	(0.72)	8.7	(0.15)	12.9	(0.05)	2
Male (%)	62.1	(2.60)	41.1	(0.32)	48.8	(0.08)	68
Race (%)							
White	47.0	(2.54)	56.3	(0.36)	75.5	(0.09)	41
Black	40.6	(2.03)	30.7	(0.31)	12.8	(0.07)	40
AI/AN	2.7	(0.52)	2.2	(0.09)	1.2	(0.02)	8
Asian	1.8	(0.49)	2.3	(0.10)	5.1	(0.04)	-
Other	7.9	(1.13)	8.5	(0.22)	5.4	(0.05)	12
Hispanic (%)	17.0	(1.42)	25.0	(0.30)	17.0	(0.07)	11
Total Sample Size	2,300		32,500		433,000		
Pop. Estimate/Weighted Count	165,400		2,684,000		30,150,000		

Sources: 2010 American Community Survey, Burt et al. 1999
Note: The ACS characteristics for GQ individuals are computed among non-imputed individuals using survey weights that are scaled up by a constant such that the new weighted count of non-imputed observations is equal to the old weighted sum of imputed and non-imputed records. * Indicates data from publicly available sources.

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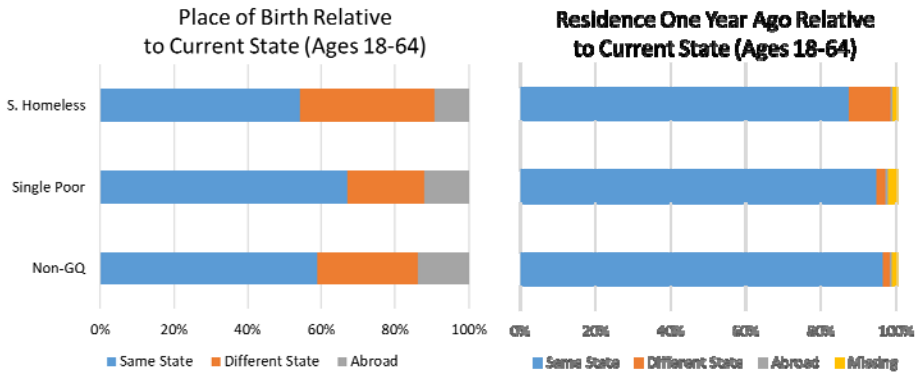
Mobility Since Birth and in Last Year



Source: 2010 American Community Survey

Share Urban, Citizenship, and Education

- 95% of the sheltered homeless are located in urban areas
  - Compared to 82% of single poor adults and 76% of the non-GQ population
- 94% of the sheltered homeless are citizens
  - Compared to 92% of single poor adults and 93% of the non-GQ population
- Educational attainment for the sheltered homeless is similar to than of poor sheltered adults
  - 27% have less than HS, 37% have HS diploma/GED, and 30% more than HS
  - 5% are college grads

Veteran Status and Functional Limitations

	Sheltered Homeless		Single Poor Non-GQ		Non-GQ	
Ages 18-64	**Mean**	**SE**	**Mean**	**SE**	**Mean**	**SE**
Veteran (%)	14.20	(2.05)	3.64	(0.16)	6.98	(0.06)
Has VA Disability Rating (%)	1.95	(0.45)	0.74	(0.08)	1.26	(0.02)
Difficulty Remembering or Making Decisions (%)	23.27	(2.00)	11.05	(0.25)	4.06	(0.04)
Difficulty Dressing or Bathing (%)	3.12	(0.56)	4.09	(0.15)	1.75	(0.03)
Difficulty Walking or Climbing Stairs (%)	16.77	(1.31)	12.26	(0.24)	5.15	(0.05)
Difficulty Doing Errands Alone (%)	7.56	(0.87)	8.48	(0.23)	3.38	(0.04)
Difficulty Hearing (%)	5.40	(0.67)	3.11	(0.17)	2.09	(0.04)
Difficulty Seeing (%)	6.44	(0.87)	4.22	(0.19)	1.69	(0.03)
Any Physical or Cognitive Disability (%)	35.26	(2.38)	21.71	(0.34)	9.87	(0.07)
Sample Size - Ages 18-64	1,900		17,000		264,000	

Source: 2010 American Community Survey

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Income and Program Receipt

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Literature: Employment and Earnings

- Metraux et al. (2018) examine New York homeless shelter users longitudinally using SSA data (presumably the DER)
  - Examines those ever shelter homeless between 1990 and 2002
  - Rates of employment around 40 percent or more in last year; higher for single adults (80% male) than adults in families (93% female)
  - Slight dip in employment for singles, some for families around onset of homelessness
  - More of a dip in earnings around onset of homelessness
  - Emphasizes heterogeneity by single or family, gender, pattern (persistence) of homelessness
- Rossi (1989); Burt and Cohen (1989); Burt et al. (1999) reported similar (or slightly lower) employment rates in the past month
  - Rossi reported employment estimates of about 30-40% in the last month, using studies that focused on both sheltered and unsheltered in Chicago
  - The NSHAPC found 44% of homelessness service users interviewed had worked in the last 30 days

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Literature: Program Receipt

- 1996 National Survey of Homeless Assistance Providers and Clients (NSHAP) collected self-reported program receipt data from a nationally representative sample of homelessness service users (Burt et al. 1999)
  - NSHAPC found that 8 percent of homeless people surveyed were receiving SSDI, and 11 percent were receiving SSI (despite much higher estimated disability rates)
  - NSHAPC indicated that 52 percent of homeless families were receiving AFDC (precursor to TANF)
  - NSHAPC indicated that 31 percent of homeless single adults were receiving SNAP, compared to 71 percent of people in homeless families

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Linkage (PIK) Rates

Unweighted Homeless PIK Rates Across Census Bureau Datasets

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ACS Shelter			0.760	0.736	0.699	0.726	0.827	0.772	0.763	0.774	0.790	0.779	0.750
Decennial Shelter							0.686						
Decennial Soup Kitchen							0.418						
Decennial Food Van							0.424						
Decennial TNSOL							0.172						
Houston HMIS[1]	0.800	0.949	0.979	0.967	0.955	0.956	0.955	0.961	0.962	0.965	0.965		
L.A. HMIS[2]	1.000	0.895	0.939	0.945	0.870	0.861	0.879	0.906	0.922	0.923	0.925		

Sources: 2006-2016 ACS, 2010 Decennial Census, 2004-2014 Los Angeles CoC HMIS Data, 2004-2014 Houston CoC HMIS Data

Note: Table reports the unweighted shares of sheltered and unsheltered homeless individuals who are PIKed in the 2006-2016 ACS and Decennial Census by GQ type. Due to a change in the ACS sampling methodology in 2011 that introduced imputed shelter homeless individuals, we report only the shares of non-imputed shelter homeless individuals who are PIKed from 2011-2016. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004.

[1]The Houston CoC encompasses shelters in Houston, Harris, Fort Bend, and Montgomery Counties.

[2]The Los Angeles CoC encompasses shelters in Los Angeles excluding Glendale, Long Beach, and Pasadena.

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Adjusting for Missing PIKs

- We adjust for individuals missing PIKs using inverse probability weighting (IPW)
- In the Decennial, our model adjusts individual-level weights for the homeless based on:
  - Age
  - Race
  - Gender
  - Hispanic origin
  - State
  - Enumeration type (shelter, soup kitchen, food van, TNSOL)
- Covariates are limited in Decennial relative to ACS; may still be some conditional non-randomness in PIKing (especially when PIK rates low)
  - We exclude TNSOLs from income and program receipt results due to this concern

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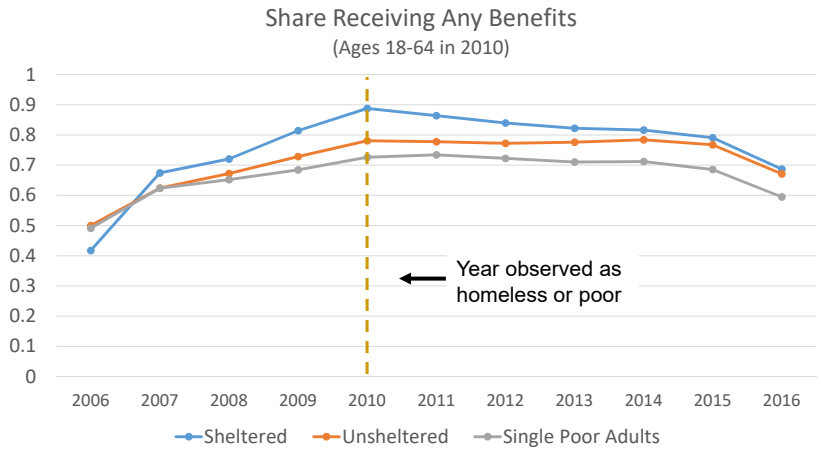
Benefit Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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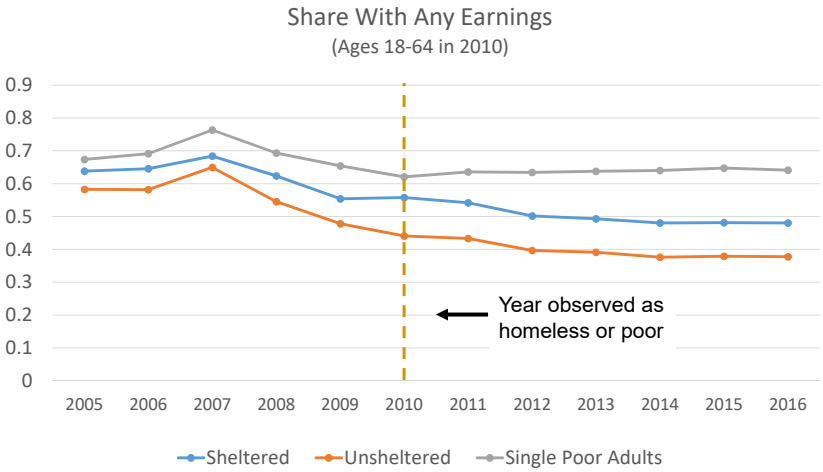
Earnings



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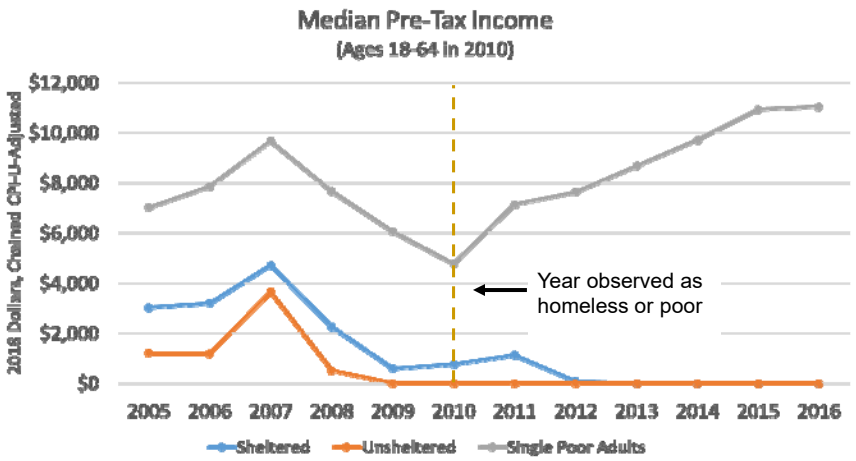
Pre-Tax Income



Sources: 2010 Decennial, 2010 ACS, 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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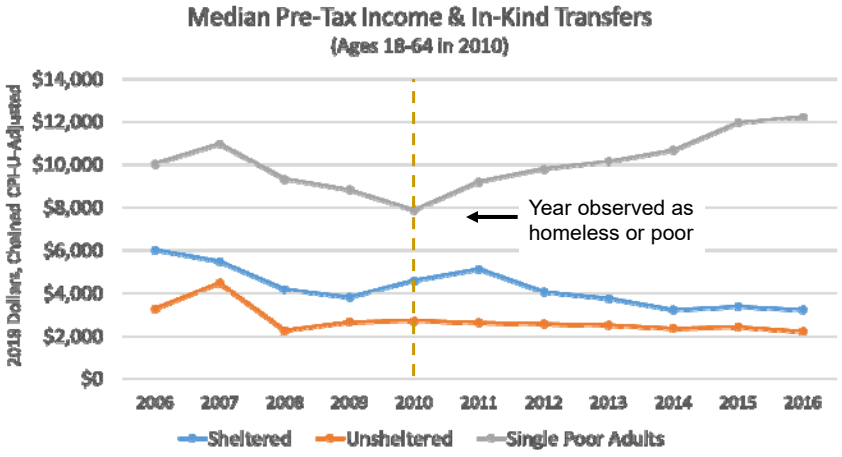
Pre-Tax Income & In-Kind Transfers



Sources: 2010 Decennial, 2010 ACS, 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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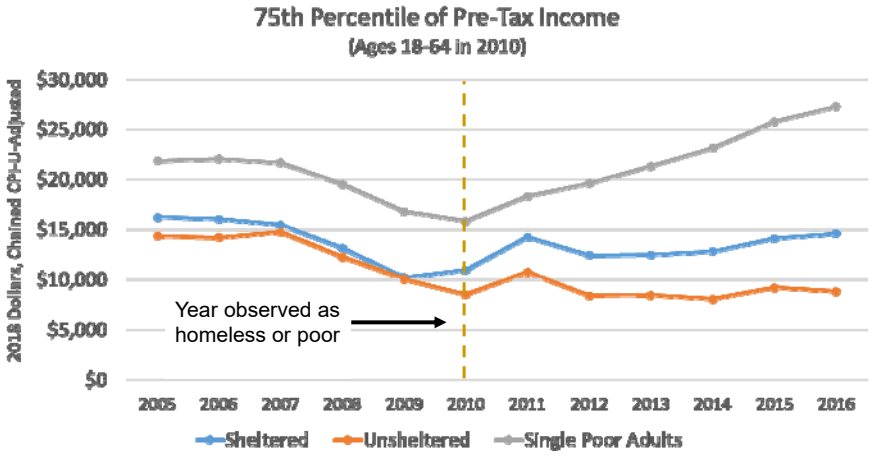
Pre-Tax Income (75th Percentile)



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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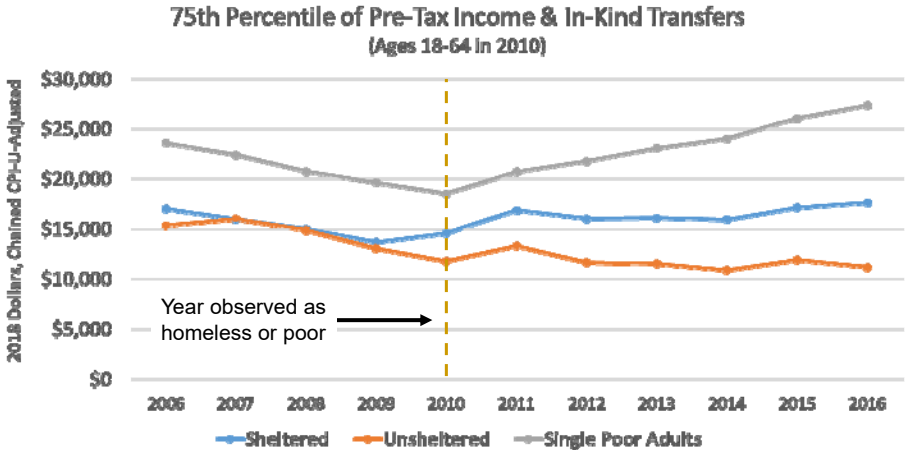
Pre-Tax Income & In-Kind Transfers (75th Percentile)



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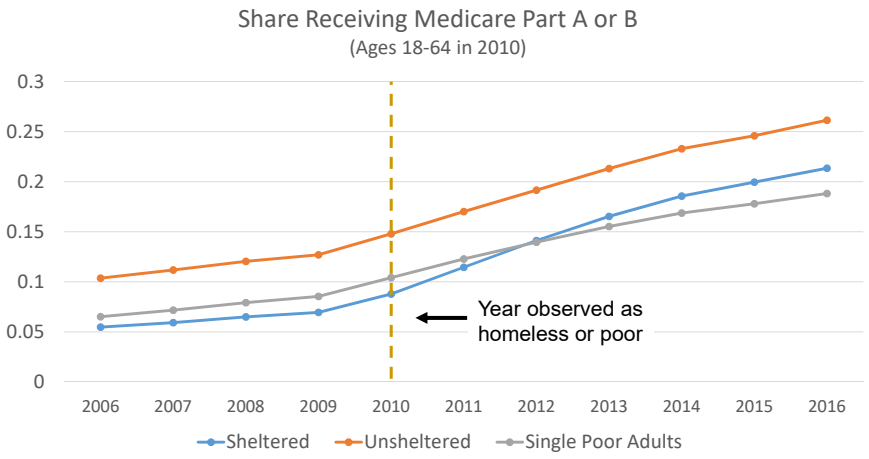
Medicare Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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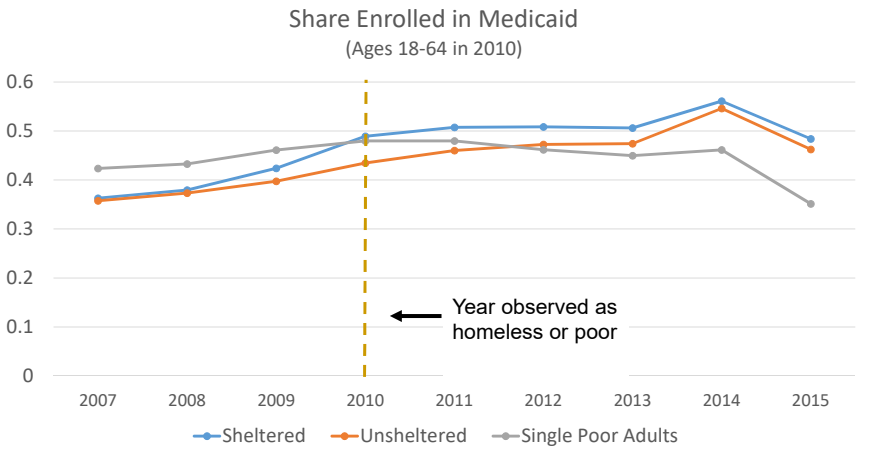
Medicaid Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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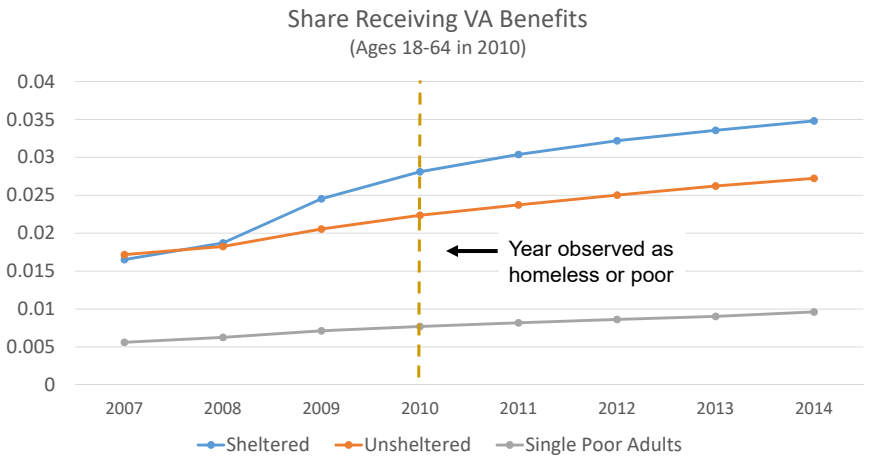
VA Benefit Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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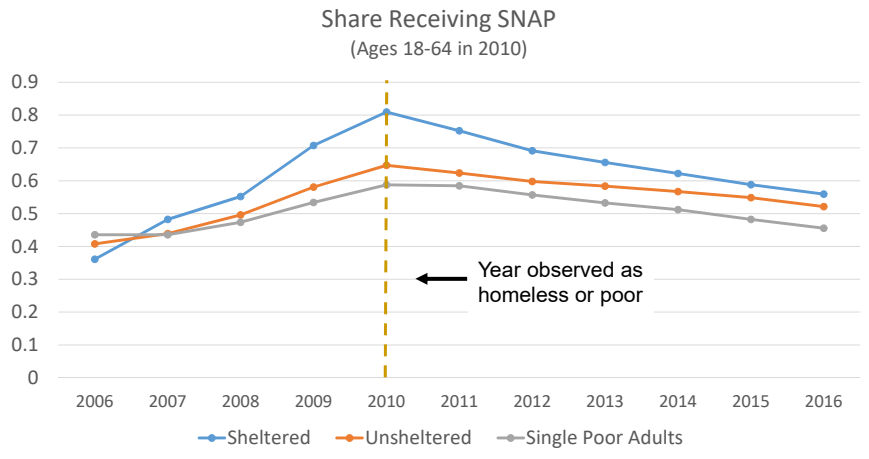
SNAP Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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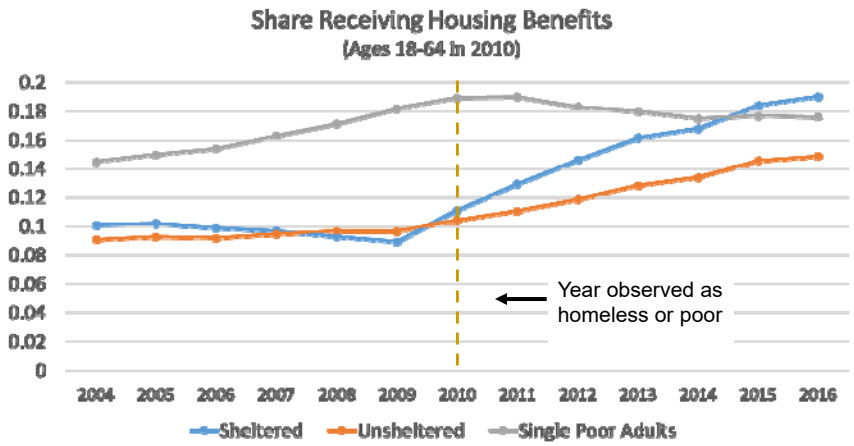
HUD Benefit Receipt



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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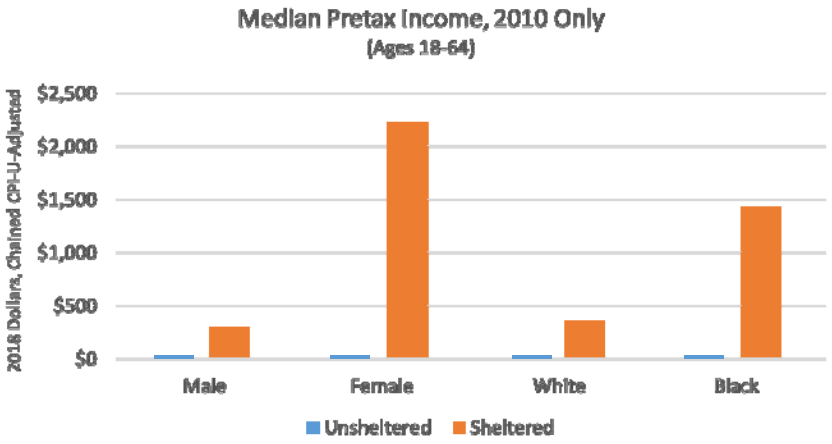
Self-Reported Earnings & Benefit Receipt

Employment & Program Participation Among Adults Ages 18-64						
	Sheltered Homeless		**Single Poor Non-GQ**		**Non-GQ Sample**	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**
Worked in Past Year (%)	40.9	(2.09)	45.8	(0.45)	77.6	(0.09)
Mean Wks Worked in Past 12 Mo. (Cond. On +)	28.4	(1.12)	33.1	(0.23)	44.9	(0.03)
Mean Hours Worked Per Week (Cond. On +)	32.9	(0.76)	30.2	(0.17)	38.7	(0.03)
Benefit Receipt Rates and Amounts Among Adults Ages 18-64						
	Sheltered Homeless		**Single Poor Non-GQ**		**Non-GQ Sample**	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**
Retirement or Pension Income Receipt Rate (%)	2.7	(0.78)	2.4	(0.13)	4.5	(0.04)
Medicaid Receipt Rate (%)	46.7	(2.37)	39.1	(0.49)	10.4	(0.07)
Food Stamp Receipt Rate (%)	60.4	(1.85)	53.7	(0.46)	13.6	(0.10)
SSI Receipt Rate (%)	8.8	(0.84)	10.8	(0.30)	2.7	(0.04)
Public Assistance Receipt Rate (%)	19.2	(1.74)	8.5	(0.25)	1.8	(0.03)
Received Any Transfer Income (%)	66.3	(1.64)	57.0	(0.47)	15.4	(0.10)
Received Any Retirement or Employment Income (%)	43.2	(1.93)	47.6	(0.45)	79.7	(0.09)
Other Income Receipt[3] (%)	11.9	(1.17)	12.9	(0.30)	8.6	(0.06)
Any Income Receipt (%)	72.7	(1.56)	74.1	(0.40)	88.3	(0.08)
Mean Total Income Amount ($) (Cond. On +)	9,474.0	(470.0)	7,526.0	(55.7)	40,400.0	(129.30)
Ages 18-64	1,900		17,000		264,000	

All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004. 44

Pre-Tax Income by Sub-Group



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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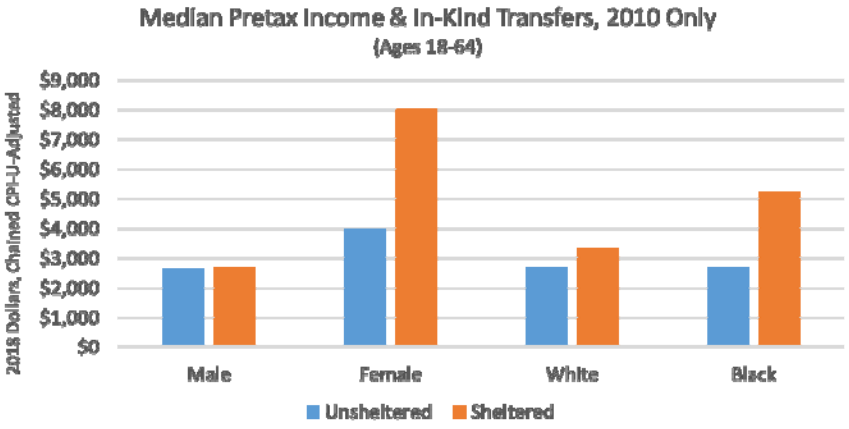
Pre-Tax Income and In-Kind Transfers by Sub-Group



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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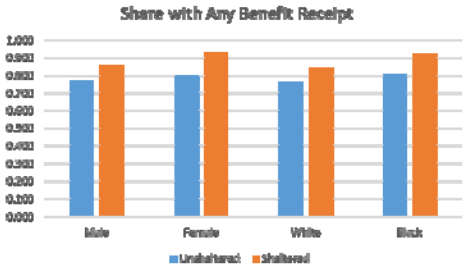
Share with Earnings or Benefits by Sub-Group



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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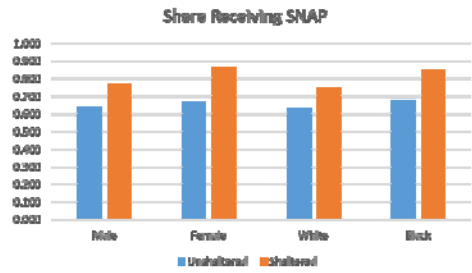
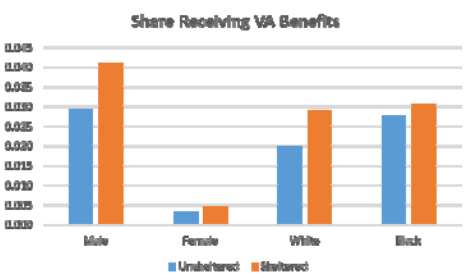
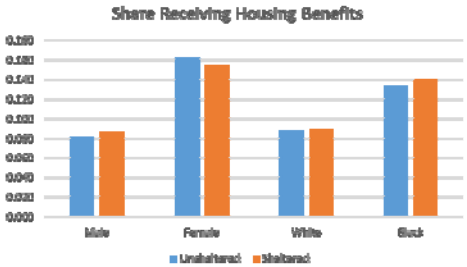
Income and Program Receipt – Ages 18-64







Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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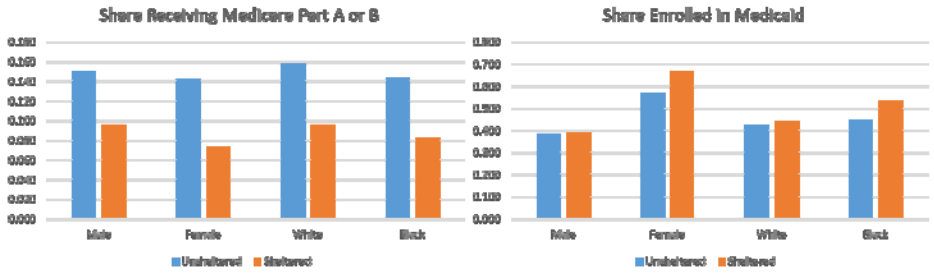
Income and Program Receipt – Ages 18-64



Sources: 2010 Decennial Census, 2019 Numident, 2003-2016 IRS 1040 Datasets, 2006-2016 W2 Datasets, 2006-2016 IRS 1099R Datasets, 2004-2016 HUD PIC & TRACS, 2007-2014 Administrative VA Dataset, 2006-2014 Medicare Datasets, 2007-2015 Medicaid dataset, SNAP datasets for Illinois (2009-2016), Indiana (2004-2016), New York (2007-2016), New Jersey (2007-2016), and Tennessee (2004-2016).

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Overall Impressions of Results

- Moderate rates of geographic mobility
- High rates of cognitive and moderate rates of physical limitations
- Administrative data indicates that the homeless are among the most materially deprived Americans
- Lack of employment and reliance on safety net persistent; year when homeless worse, but not pronounced
- Homeless almost all reached by some safety net program

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Comparison to Previous Literature

- Where we agree with previous literature
  - Blacks are overrepresented among those experiencing homelessness
    - We find 40.6% of sheltered homeless are black, compared to 30.7% of the poor comparison group and 12.8% of the general population
  - Most single homeless adults are male
    - 62.1% in the 2010 ACS
  - Veterans are disproportionately represented
    - 14.2% of sheltered homeless were veterans in the 2010 ACS, compared to 3.64% of the poor comparison group and 12.8% of the general population
  - Hispanics are underrepresented relative to the broader poor population
    - 17% Hispanic, compared to 25% for the poor

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Comparison to Previous Literature

- Where we disagree or bring new evidence
  - Administrative data reveals much higher rates of SNAP receipt than self-reported in survey
    - 80% of sheltered homeless received SNAP, as opposed to 60% in ACS
  - Employment among shelter homeless may be higher than previously thought
    - Administrative data indicates 55% for sheltered homeless, as opposed to 40-45% in previous literature
  - Sheltered homeless have higher rates of enrollment in almost all safety net programs than unsheltered, despite higher incomes
  - Females and African-Americans have higher incomes than males and whites, respectively

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Future Research

- Transitions in and out of Homelessness
  - Length of homelessness and dynamics of housing status for the population
  - Demographic and economic factors associated with entry to and exit from homelessness
- Migration and Geographic Dispersion
  - Determinants of the geographic distribution of homelessness
  - Degree of mobility of people experiencing homelessness
- Mortality
  - Mortality differences between the sheltered homeless, unsheltered homeless, and non-homeless

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Appendix

Possible Reasons for Differences

- Time Frame
  - Many people experiencing homelessness cycle into and out of shelters fairly rapidly (Metraux et al. 2018, O'Flaherty 2019)
  - Point prevalence: PIT, Decennial, and ACS (approximately)
  - Period prevalence: HMIS data used to estimate of number of homeless shelter users during fiscal year (October-September)
  - Point-in-time samples give greater weight to individuals with longer or more frequent spells
- Seasonality
  - ACS reflects annual average, but doesn't show pronounced seasonality
  - HUD PIT at night in the last ten days of January
  - Decennial count conducted March 29-31, 2010

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Possible Reasons for Differences

- Coverage
  - Only PIT includes individuals in domestic violence shelters
    - Higher count of females and children
- Completeness
  - HMIS shelter list maintained by local organizations (CoCs) – perhaps more complete than the shelter list used by Decennial and ACS
  - Completeness of PIT unsheltered count likely varies by CoC
  - Census report on homeless enumeration acknowledges it may be incomplete
- Misclassification
  - In Decennial, individuals interviewed at unsheltered locations were asked whether they had a usual home elsewhere, and records were de-duplicated using probabilistic matching
    - Most do not answer question about usual home elsewhere – in the end we assume these individuals are homeless, but that is not verified – key caveat

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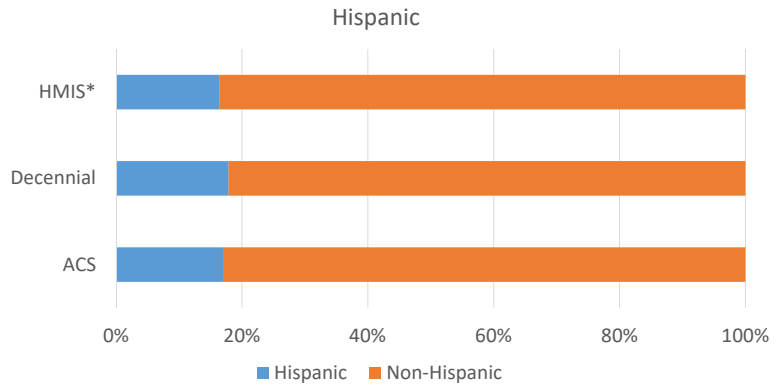
Sheltered Homeless Characteristics

- Hispanic ethnicity of sheltered homeless by data source (2010)

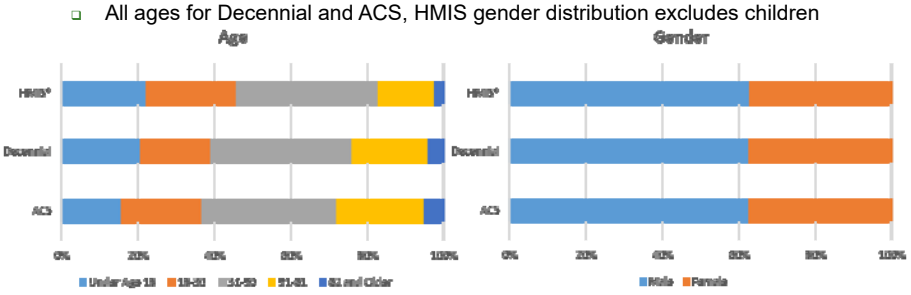


Sources: 2010 American Community Survey, 2010 Decennial Census, 2010 Annual Homelessness Assessment Reports to Congress One-Year Estimates of Shelter Homelessness. * Indicates data from publicly available sources.

All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004. 59

Sheltered Homeless Characteristics

- Age and gender of the sheltered homeless by data source (2010)
  - All ages for Decennial and ACS, HMIS gender distribution excludes children



Sources: 2010 American Community Survey, 2010 Decennial Census, 2010 Annual Homelessness Assessment Reports to Congress One-Year Estimates of Shelter Homelessness

Note: Figure reports, by survey, the share of shelter homeless individuals of a given age category or gender in 2010. The ACS characteristics are computed among non-imputed individuals using survey weights that are scaled up by a constant such that the new weighted count of non-imputed observations is equal to the old weighted sum of imputed and non-imputed records. The HMIS only reports gender distributions for homeless adults. These shares exclude children. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004. * Indicates data from publicly available sources.

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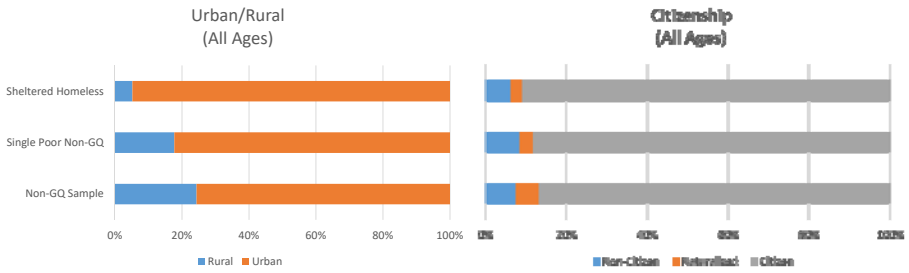
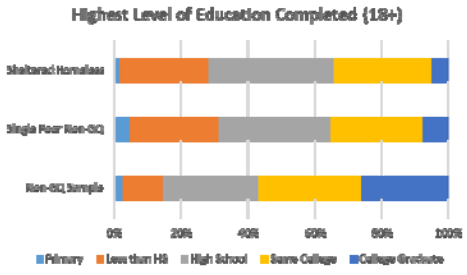
Urban/Rural and Citizenship



Source: 2010 American Community Survey

Note: The ACS characteristics for GQ individuals are computed among non-imputed individuals using survey weights that are scaled up by a constant such that the new weighted count of non-imputed observations is equal to the old weighted sum of imputed and non-imputed records. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004. * Indicates data from publicly available sources.

Educational Attainment



Educational Attainment in NSHAPC (1996)*	
Less than HS	38%
HS Grad/GED	34%
More than HS	28%

Sources: 2010 American Community Survey, Burt et al. 1999

Note: The ACS characteristics for GQ individuals are computed among non-imputed individuals using survey weights that are scaled up by a constant such that the new weighted count of non-imputed observations is equal to the old weighted sum of imputed and non-imputed records. Burt et al. respondents had three educational attainment statuses: less than high school, high school graduate/GED, and more than high school. All results were approved for release by the Census Bureau, authorization number CBDRB-FY20-ERD002-004. * Indicates data from publicly available sources.

PIKed vs unPIKed Characteristics

- Relative to PIKed individuals, unPIKed homeless individuals in the 2006-2016 ACS are
  - 2.4 years younger on average, 6.1 ppts more likely to be female, 4.6 ppts less likely to be white
  - 8.4 ppts more likely to be Hispanic, 12.6 ppts more likely to be born outside the U.S
  - 7.4 ppts less likely to report having worked in the last year, 8.6 ppts less likely to report any income receipt
- Most unPIKed individuals are missing sufficient information (name or date of birth) to be PIKed

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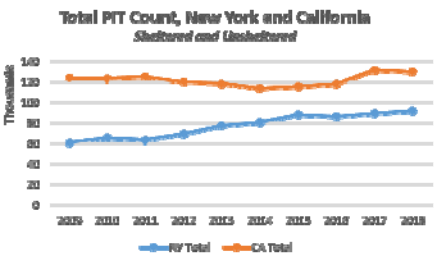
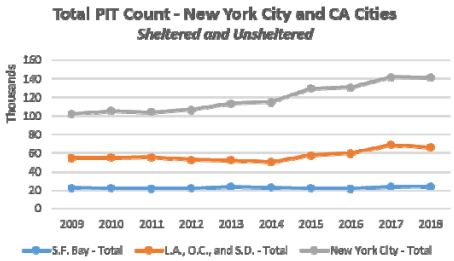
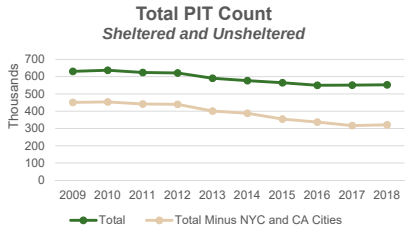
Recent Rises in California and NY







Source: HUD: https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/
Note: All data obtained from publicly available sources. San Francisco Bay includes the following CoCs: San Francisco, Contra Costa County, Marin County, Alameda County, San Mateo County, and Santa Clara County. LA, OC, and SD includes: Los Angeles, Pasadena, Glendale, Long Beach, Orange County, and San Diego.

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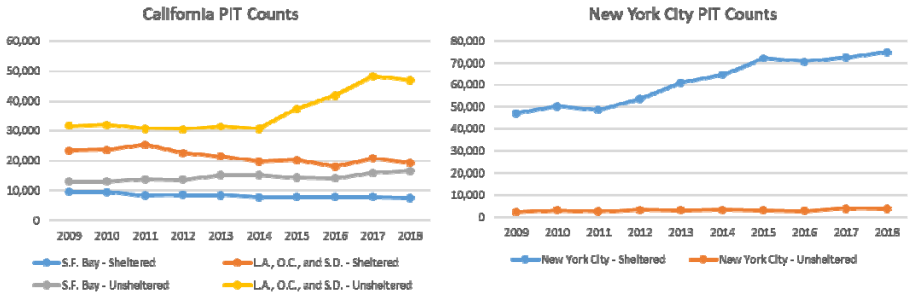
Recent Rises in California and NY



Source: HUD: https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/
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