

Census' New Annual Total Business Demographics Program: A Hybrid-Data Approach

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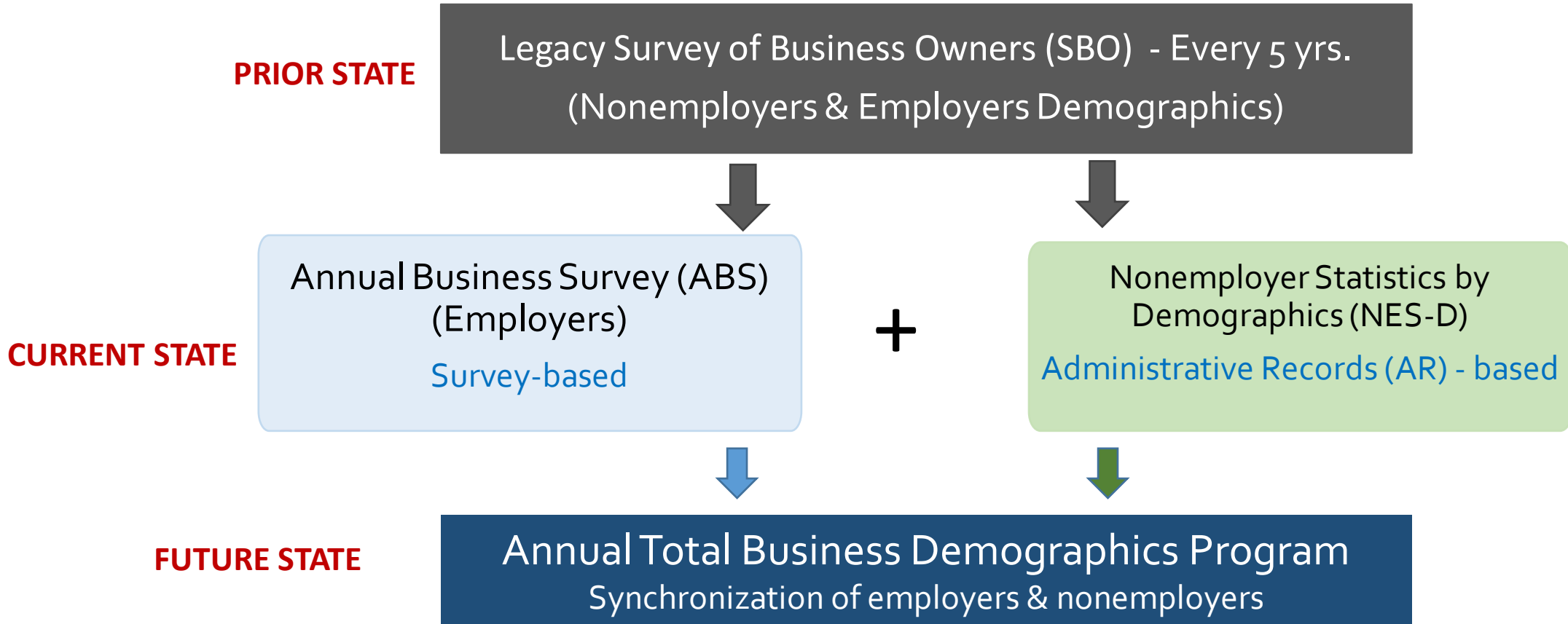
FCSM Conference

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The Annual Business Survey (ABS) is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation. The Nonemployer Statistics by Demographics (NES-D) is partially sponsored by the Office of Advocacy, Small Business Administration (SBA).

The Census Bureau's Disclosure Review Board has approved all statistics and estimates presented today for public release under approval numbers CBDRB-FY23-ESMD010-004, CBDRB-FY20-053 and CBDRB-FY20-390.

The Annualization of Census Bureaus' Business Demographics Statistics



About (1/2)

ABS

- Annual survey of employer firms
- **Content:** Provides counts, receipts & economic information for employer businesses by sex, ethnicity, race, & veteran status of business owners at:
 - Geography levels
 - US, state, metropolitan statistical area (MSA) (all years)
 - County, economic place (select years)
 - NAICS levels
 - 2-3 digit NAICS (all years)
 - 2-6 digit NAICS (select years)
 - Employment and receipt-size class of firm
 - Cross-tabulations

NES-D

- **Not a survey** -- Annual series created only w/ administrative records (AR) & Census data
- **Content:** Provides counts & receipts for universe* of nonemployer businesses by sex, ethnicity, race, & veteran status of business owners at:
 - Geography levels (currently)
 - US, state, metropolitan statistical area (MSA)
 - NAICS levels (currently)
 - 2-3 digit NAICS
 - Receipt-size class
 - **Legal form of organization (LFO)**
 - Cross-tabulations

About (2/2)

ABS

- **Content (cont'd):** Measures various other topics w/ rotating content modules:
 - Research and Development
 - Innovation
 - Technology
 - Financing
- First release was in 12/2019 with 2017 reference year (2018 ABS)
- Microdata available? Yes

NES-D

- **Content (cont'd):** Provides other data for nonemployers:
 - Age of Owner
 - Place of Birth
 - U.S. Citizenship
 - Plans to add non-demographic characteristics (e.g., Does nonemployer also work for a wage, does he/she hire contractors, marital status)
- First release was in 2020 with reference year 2017
- Microdata available? Forthcoming

ABS Content by Survey Year

2018

- Company Information
- Owner Characteristics
- Detailed Innovation
- R&D (1-9 emp)
- Digital Technology
- Financing

2019

- Company Information
- Owner Characteristics
- Reduced Innovation
- R&D (1-9 emp)
- Automation Technology

2020

- Company Information
- Owner Characteristics
- Detailed Innovation
- R&D (1-9 emp)
- Globalization

2021

- Company Information
- Owner Characteristics
- R&D (1-9 emp and nonprofit organizations)
- Digital Technology, Operations and Innovation
- Financing
- Management Practices
- Coronavirus Pandemic (R&D & Financing)

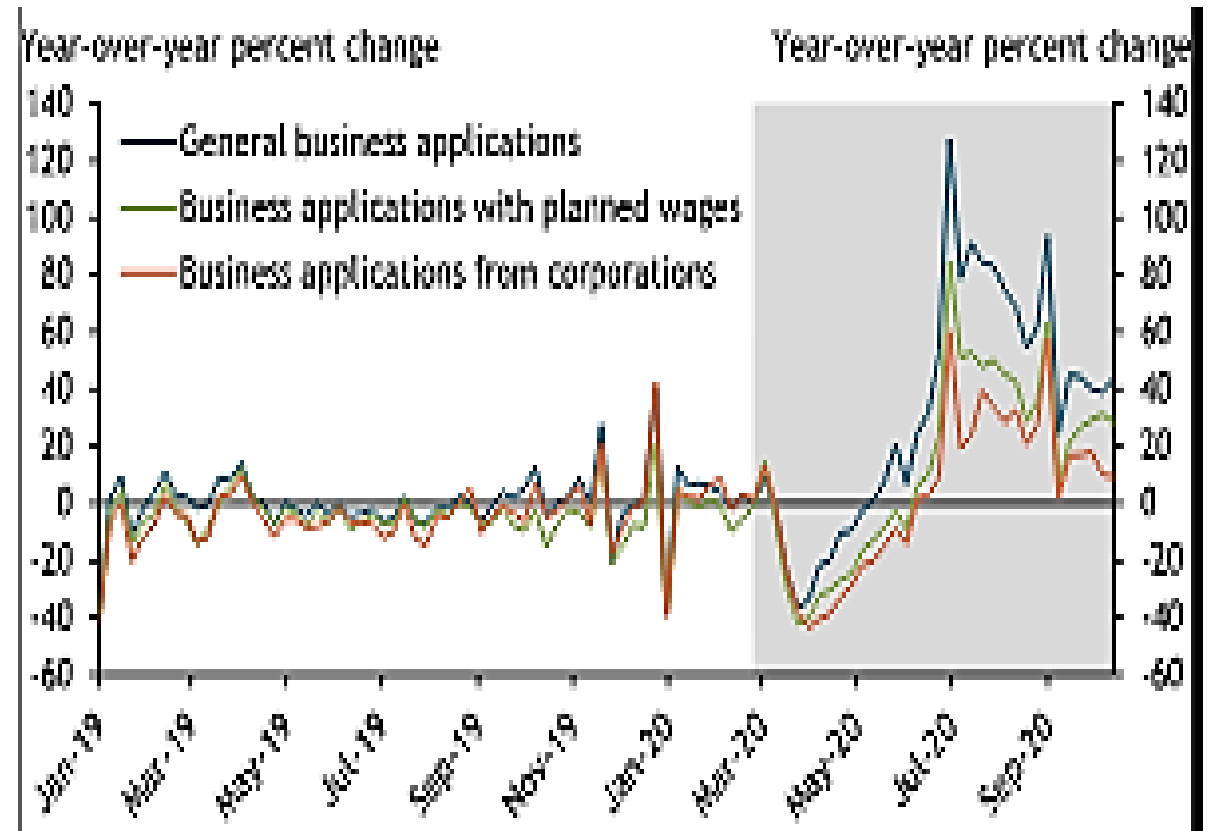
2022

- Company Information
- Owner Characteristics
- R&D (1-9 emp and nonprofit organizations)
- Innovation, Digital Technology
- Design and Intellectual Property
- Globalization
- Coronavirus Pandemic (R&D & Financing)

Who are Nonemployers?

- Nonemployers: businesses w/ no paid employment, subject to federal income taxes, & w/ annual receipts of \$1,000 or more
- As of 2018, there were approximately 26 million nonemployers accounting for about 83 percent of all U.S. businesses but only about 3 percent of receipts
 - Approximately 87 percent of nonemployers are sole proprietors (i.e., businesses with only 1 owner, usually thought-of as self-employed persons)
- Nonemployer growth outpacing that of employers
 - From 2014 to 2018, number of nonemployers grew by approximately 11 percent and employer firms by approximately 3.5 percent
- Unprecedented increase in business applications during pandemic (see graph) – will they become nonemployer businesses?

Employer Identification Number (EIN) Applications



Sources: Business Formation Statistics, U.S. Census Bureau.

How is NES-D created?

- [Nonemployer universe](#) identified & extracted from Business Register*
- Unique anonymized person identifiers called Protected Identification Keys (PIKs) facilitate linkage of records across data sources
- [Source of PIKs/Owner identification](#)
 - Sole proprietors – Tax form 1040
 - Partnerships & S-corporations – Schedule K-1 (Forms 1065 & 1022S)
 - Owners of U.S. nonemployer C-corporations cannot be identified with tax or AR data (only 2% of nonemployers & 4% of receipts)
 - Evaluating feasibility of imputation
- [Data sources](#): BR, Decennial, American Community Survey, SSA Numident, DVA AR data

How well does NES-D cover nonemployer universe?

- PIK information available for approximately 99 percent of nonemployer firms in each year – not including C-corps
- Availability of sex, age, place of birth & citizenship for approximately 98-99 percent of owners (w/ PIKs)
- Availability of race and ethnicity data for approximately 90-95 percent of owners (w/ PIKs)
- Approximately 90-95 percent of owners (w/ PIKs) are not missing any demographics
 - Only about 1 percent are missing 3 or more demographics
- Missing demographics are imputed

⇒ In context: Nonemployers non-response rate in SBO approx. 50%

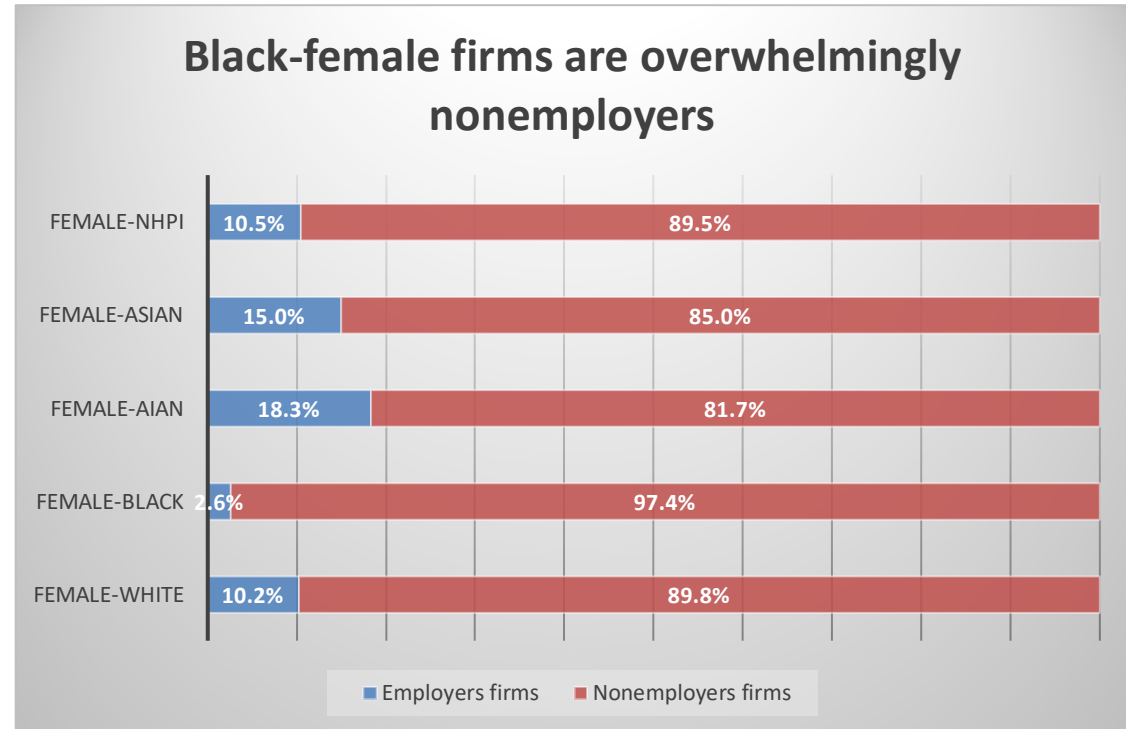
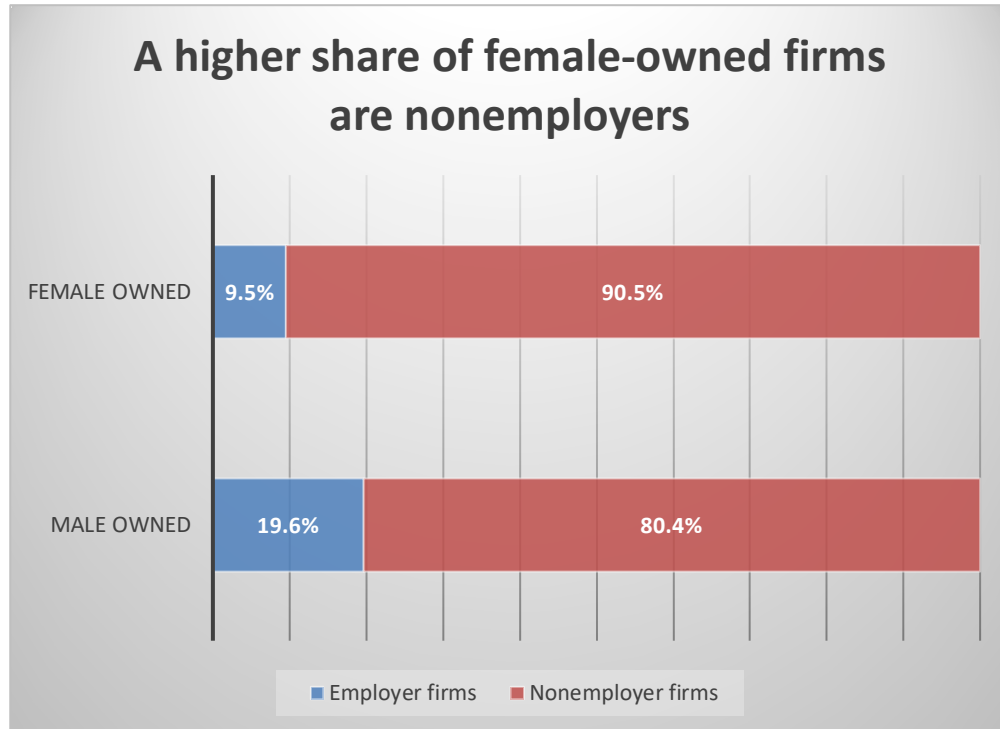
NES-D - Some challenges

- Owners of U.S. nonemployer C-corporations cannot be identified with tax or AR data (only 2% of nonemployers)
 - Evaluating feasibility of imputation
- Veteran status
 - Conceptual differences between what the ABS view as a veteran and VA's definition: VA concept is narrower
 - Potential for supplementary AR source of military service data
- Equally-owned category for sole proprietorships (1 owner) possible in survey but not in AR sources
- Shocks (e.g., pandemic) may delay/impact AR (e.g., tax filings)

NES-D Next Steps

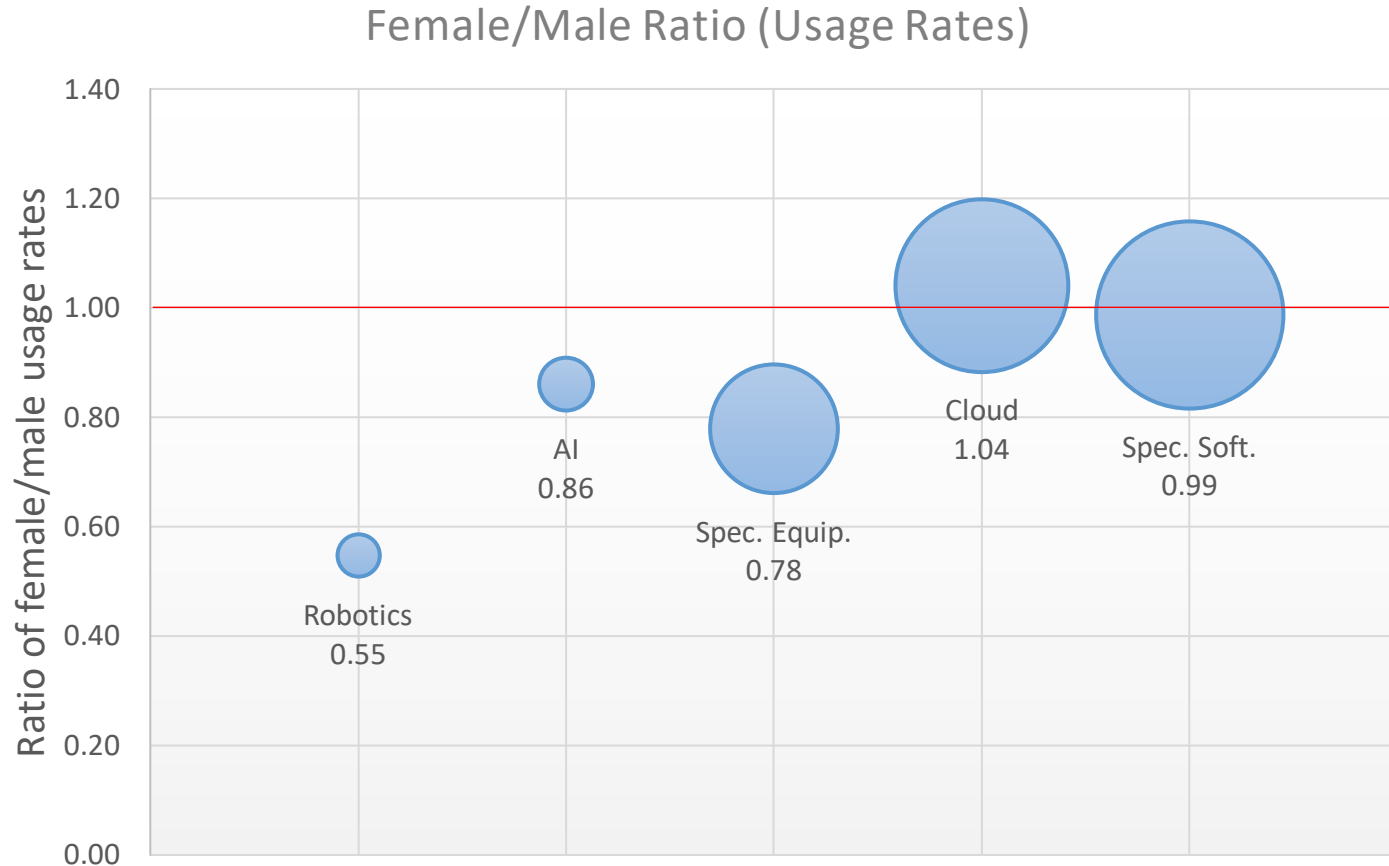
- Increase level of detail for nonemployers:
 - Geo detail: Potentially down to county level in future releases as disclosure-avoidance rules allow
 - Industry detail: Potentially down to 6-digit NAICS in future releases as disclosure-avoidance rules allow
- Shorten dissemination lag from 3 to 2 years –but pandemic getting in the way
- Additional characteristics for nonemployers, including:
 - Household (e.g., marital status)
 - Related to gig-economy (e.g., does nonemployer also work for a wage? Does nonemployer use contractors?)
 - Firm age
 - Transitions to employer status
 - Patenting activity, exporter/importer status

Illustration - 2018 Hybrid-data Total Business Demographics



Sources: 2018 NES-D and 2019 ABS (2018 reference year)

Illustration – 2018 ABS Technology Use by Sex of Business Owners



Robotics usage 45% lower for female-owned businesses

Most commonly adopted technologies (i.e., cloud and specialized software) have similar adoption rates among female- and male-owned firms

*Note: bubble size is proportional to overall usage rate of each technology

How Stakeholders Use Our Data

- Stakeholders use data to:
 - Assess business assistance needs
 - Allocate available program resources
 - Analyze long-term economic and demographic shifts
- Stakeholder resources using ABS/NES-D data include:
 - National Women’s Business Council (NWBC) - [2021 Annual Report \(nwbc.gov\)](https://www.nwbc.gov/2021-Annual-Report)
 - Minority Business Development Agency (MBDA) - [All Minority-Owned Firms Fact Sheet 0728021 11pm Hires.pdf \(mbda.gov\)](https://www.mbda.gov/All-Minority-Owned-Firms-Fact-Sheet-0728021-11pm-Hires.pdf)
 - Small Business Administration, Office of Advocacy (SBA) - [What's New With Small Business, 2021 \(sba.gov\)](https://www.sba.gov/What-s-New-With-Small-Business-2021)

ABS and NES-D tables are available at:

<https://www.census.gov/programs-surveys/abs/data.html>

Additional ABS tables are available at:

<https://www.nsf.gov/statistics/srvyabs>

Thank you!

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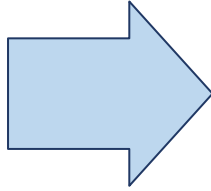
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Nonemployer Demographics – Past & Present

Previously:

Collected as Part of Survey of Business Owners (SBO)

- Survey (2012) – sample size approx. 800,000 nonemployer & 940,000 employer firms
- High respondent burden
- Low response rate (50% for nonemployers) => high imputation rate & costs
- **Every five years**
- 3-year dissemination lag from reference year



Currently:

NES-D -- AR & Census Data

- **Not a survey** - Nonemployer **universe** (approx. 26 mill. as of 2018)
- **No additional respondent burden**
- Low imputation rates & costs
=> In 2017, imputation rates between <10% for race and 1% for sex and age
- **Annual – higher frequency**
- Will shorten dissemination lag to 2 years (from reference year) – **more timely**
- Ability to add characteristics from AR to augment/enrich the data product w/ relative ease & low costs, but some loss of content

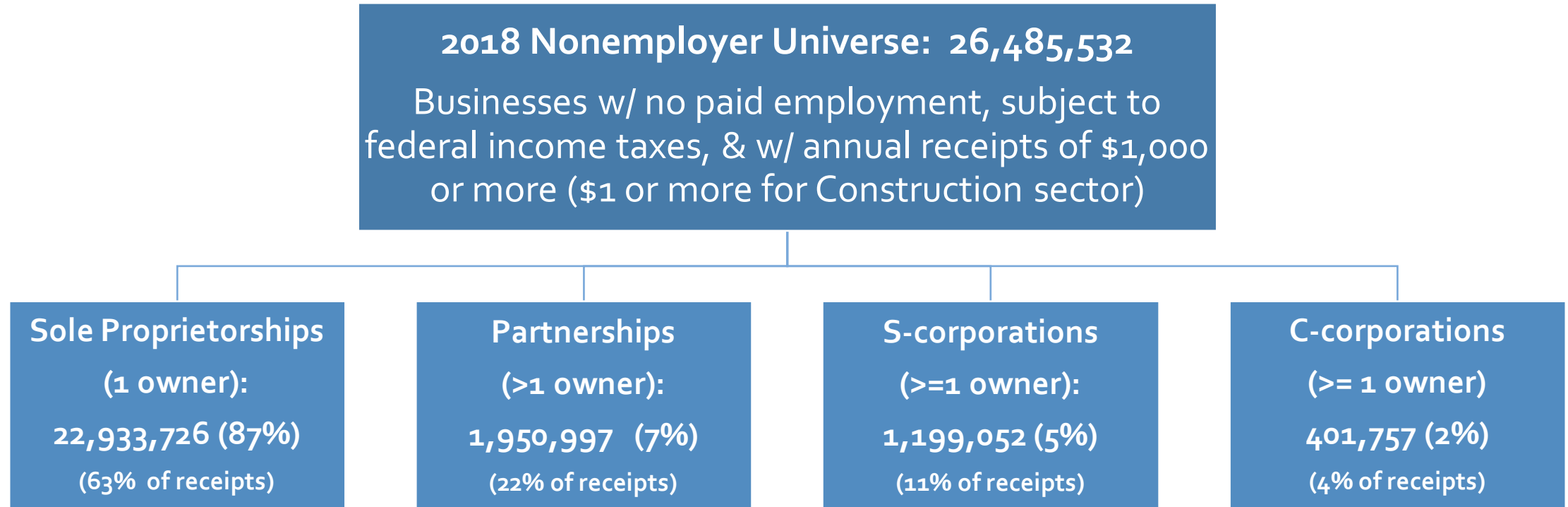
NES-D Data Sources

Variables	Data Sources
Receipts, industry, geographic location, legal form of organization	Nonemployers database from Business Register
Race Hispanic origin Sex Age of owner Place of birth U.S. Citizenship status	Decennial Census Data, American Community Survey (ACS), & Numident (from Social Security Administration)
Veteran-status	Department of Veterans Affairs (VA) AR data (USVETS). Also exploring Department of Defense data.

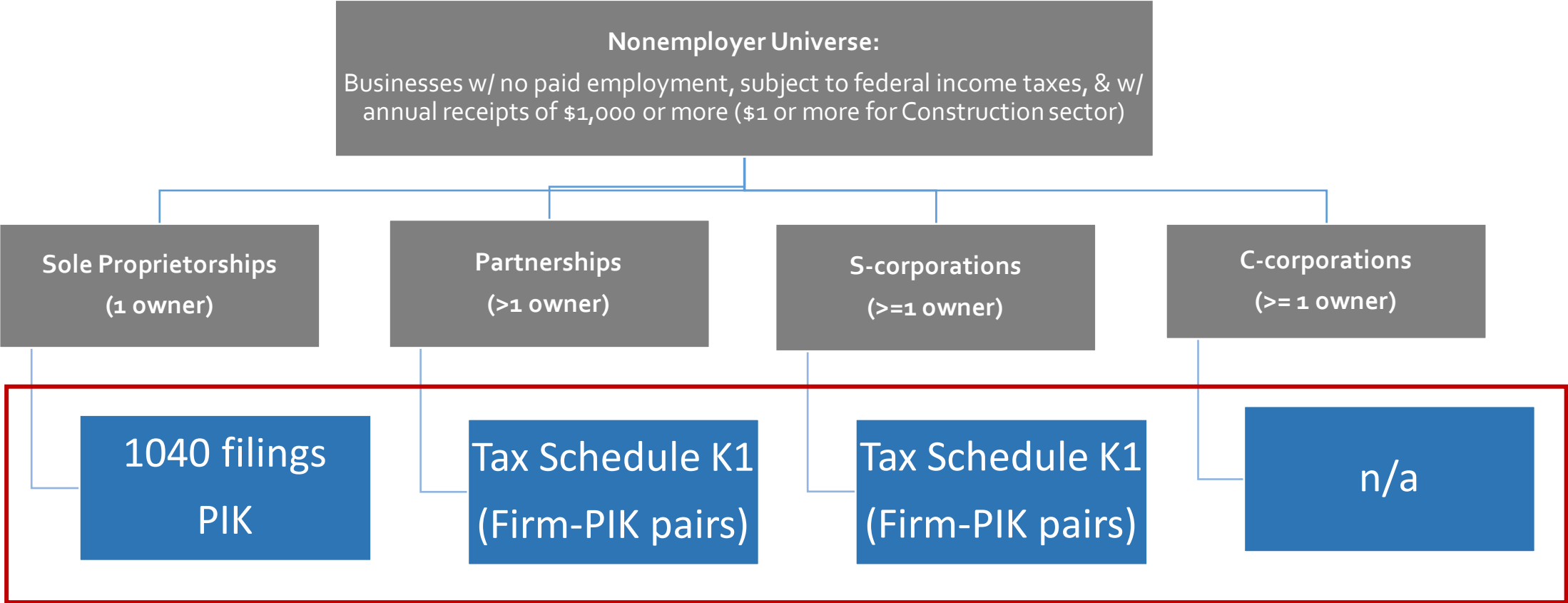
How is NES-D created? (2/2)

- To obtain firm-level demographics:
 - Methodology consistent with employer side (ABS)
 - Exclude firms where top owner owns < 10% of firm => demographically unclassifiable firms
 - Top 4 (person) owners (>95% of NE firms have 4 or fewer owners)
 - Firm is assigned to the demographic group holding majority ownership (>50%)
 - Equally-owned category possible when demographic characteristic is binary (e.g., female, male, female-male equally owned)

Nonemployer Universe



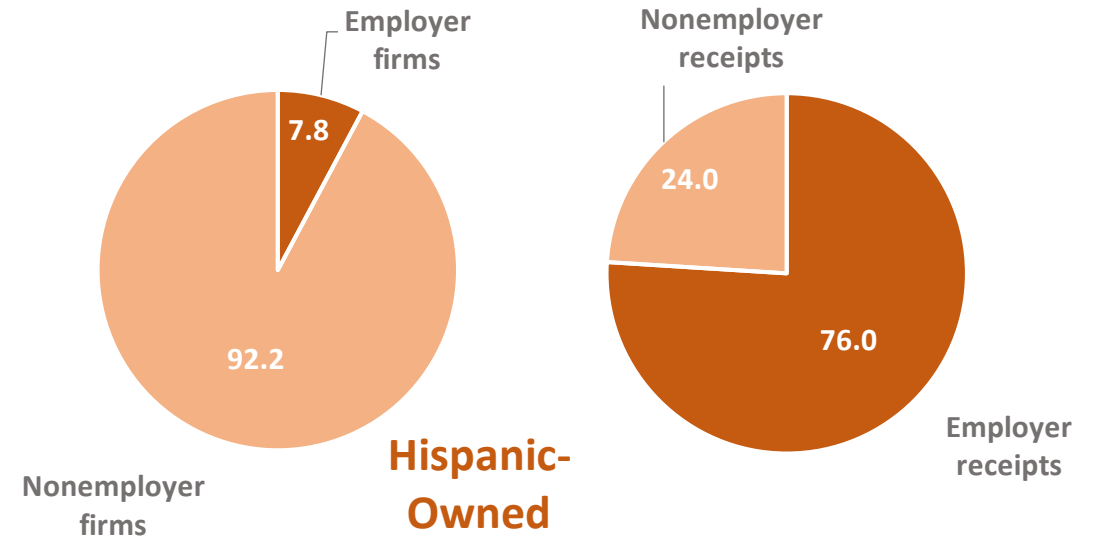
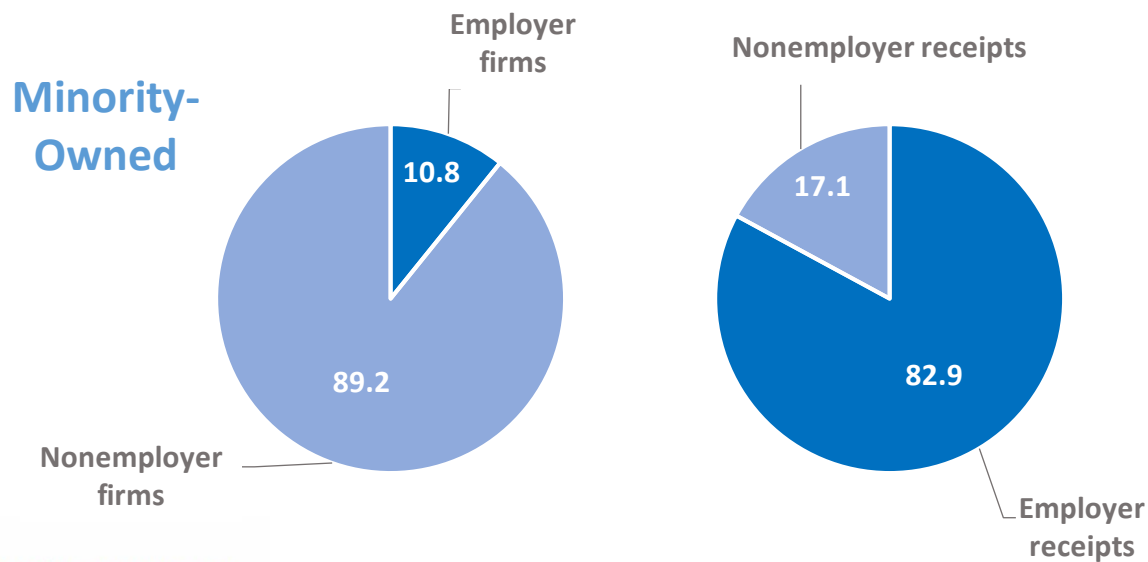
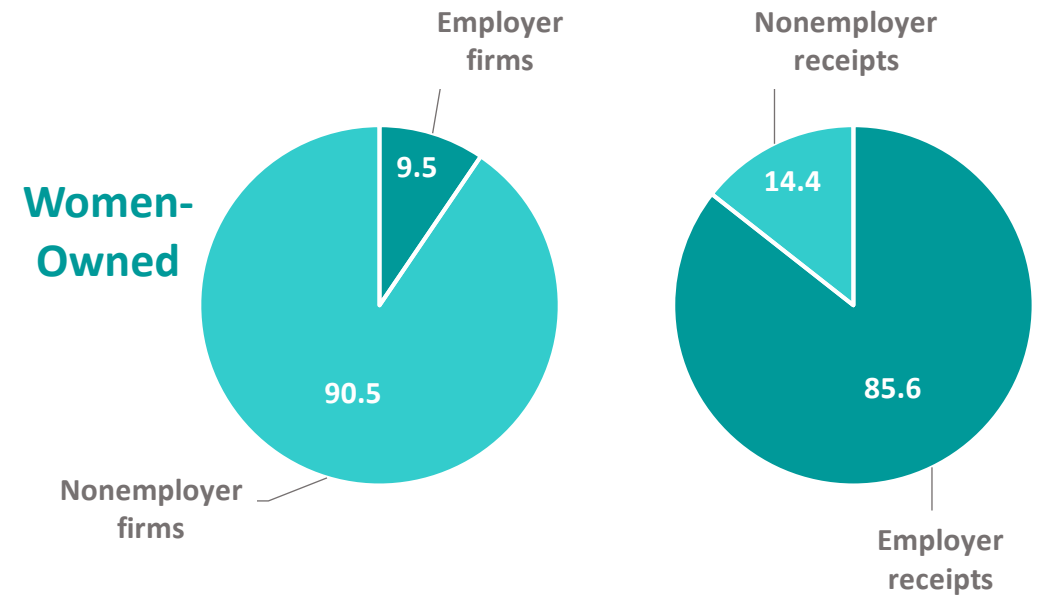
Nonemployer Universe



Source
of PIKs

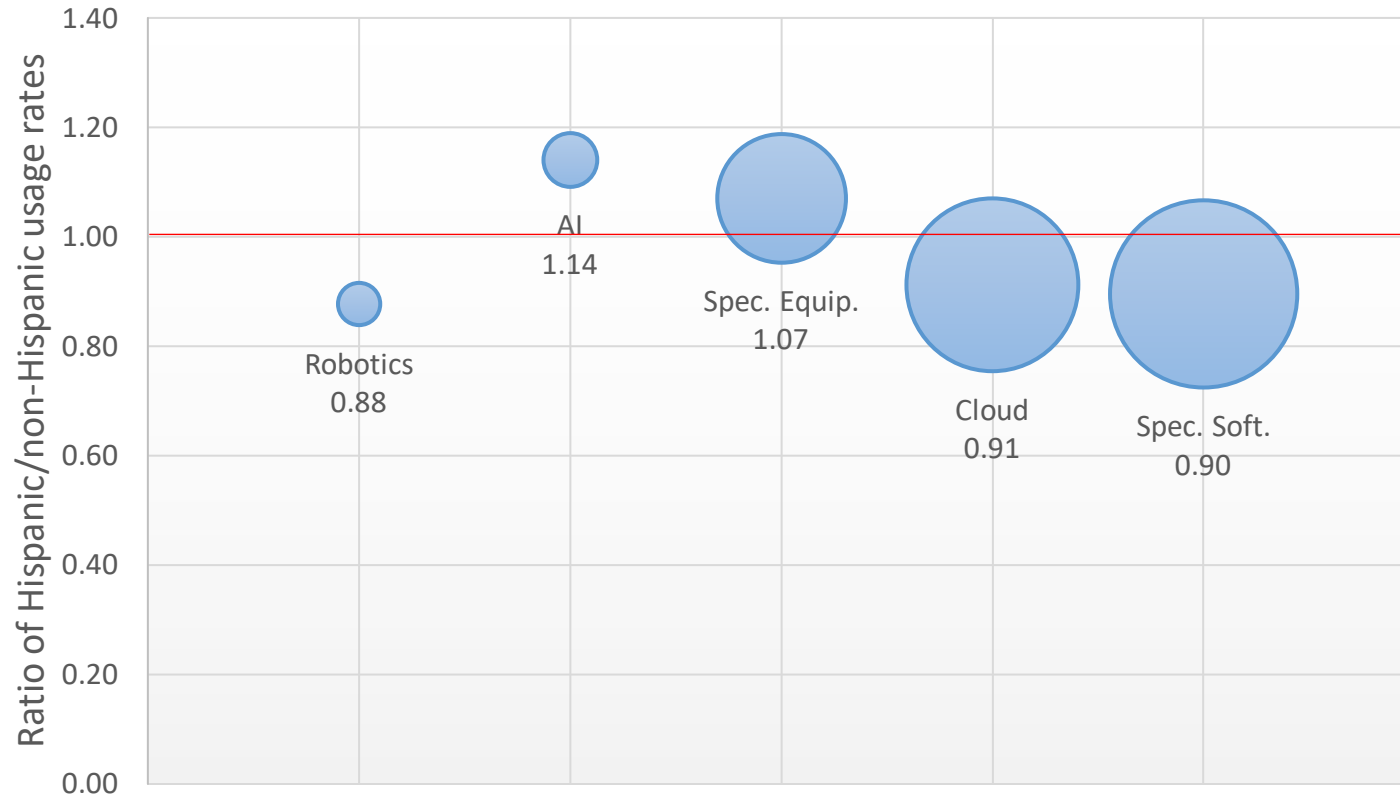
2018 Hybrid-Data: Total Business Demographics

	Total Number of Firms	Total Receipts (\$1,000)
Minority-Owned	9,709,323	1,787,710,036
Women-Owned	12,001,410	2,076,519,555
Hispanic-Owned	4,228,625	599,527,934



Technology Use by Ethnicity of Business Owners

Hispanic/non-Hispanic Ratio (Usage Rates)

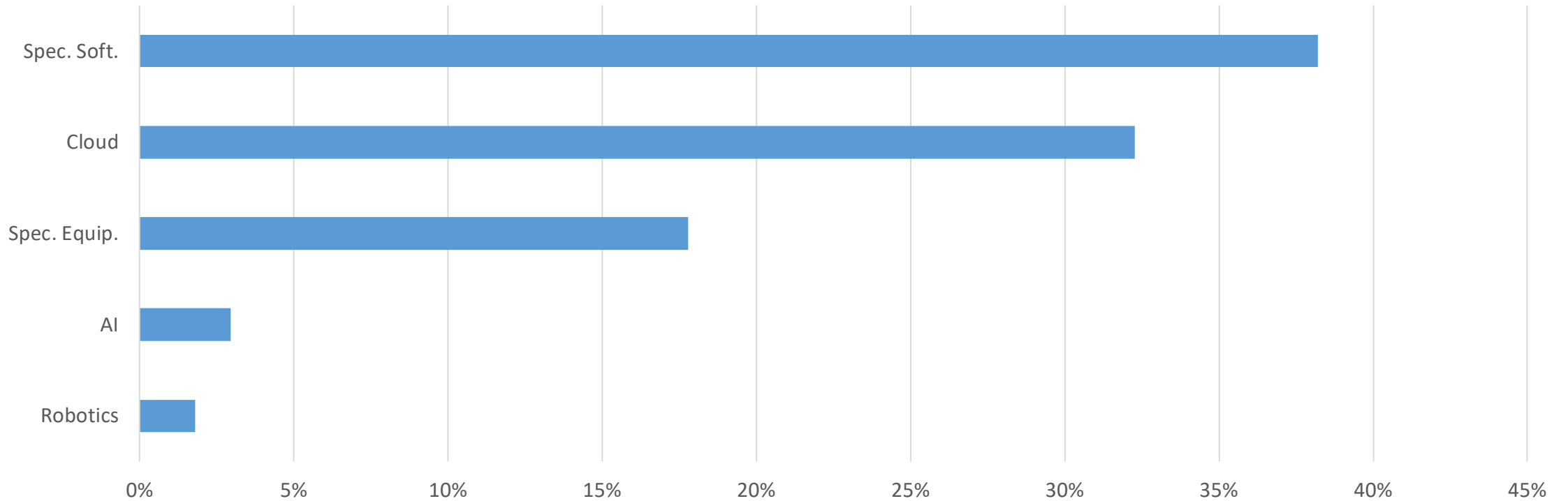


Technology usage rates relatively similar across ethnicities

*Note: bubble size is proportional to overall usage rate of each technology

Illustration of Business Characteristics Results

Overall Technology Usage Rates



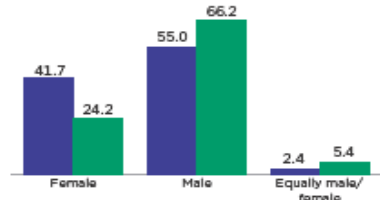
How Stakeholders use NES-D

Introducing the New Annual Nonemployer Demographics Statistics (NES-D)

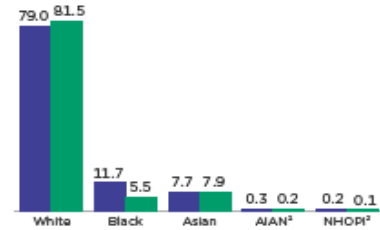
NES-D provides annual data on nonemployer business demographics (e.g., sex, ethnicity, race and veteran status) from existing administrative records and U.S. Census Bureau data.

■ Percent of total nonemployer businesses ■ Percent of total nonemployer business receipts

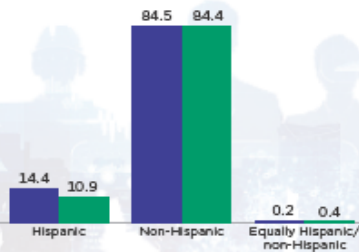
Share of nonemployer businesses and receipts by owners' sex



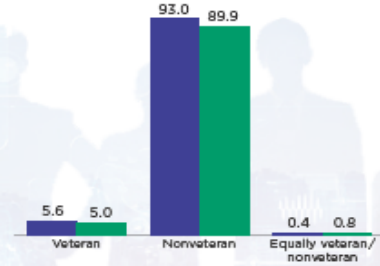
Share of nonemployer businesses and receipts by owners' race



Share of nonemployer businesses and receipts by owners' Hispanic origin



Share of nonemployer businesses and receipts by owners' veteran status



¹ American Indian and Alaska Native.

² Native Hawaiian or Other Pacific Islander.

Notes: Excludes nonemployer C-corporations, which account for approximately 2% of nonemployer businesses and 4% of receipts.

Less than 1% of nonemployer businesses are not eligible for demographic classification for reasons such as being owned exclusively by other businesses (i.e., having no person owners). These unclassifiable businesses account for about 4% of receipts.

The Census Bureau has reviewed this product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied. Approval ID: CBDRB-FY20-390.

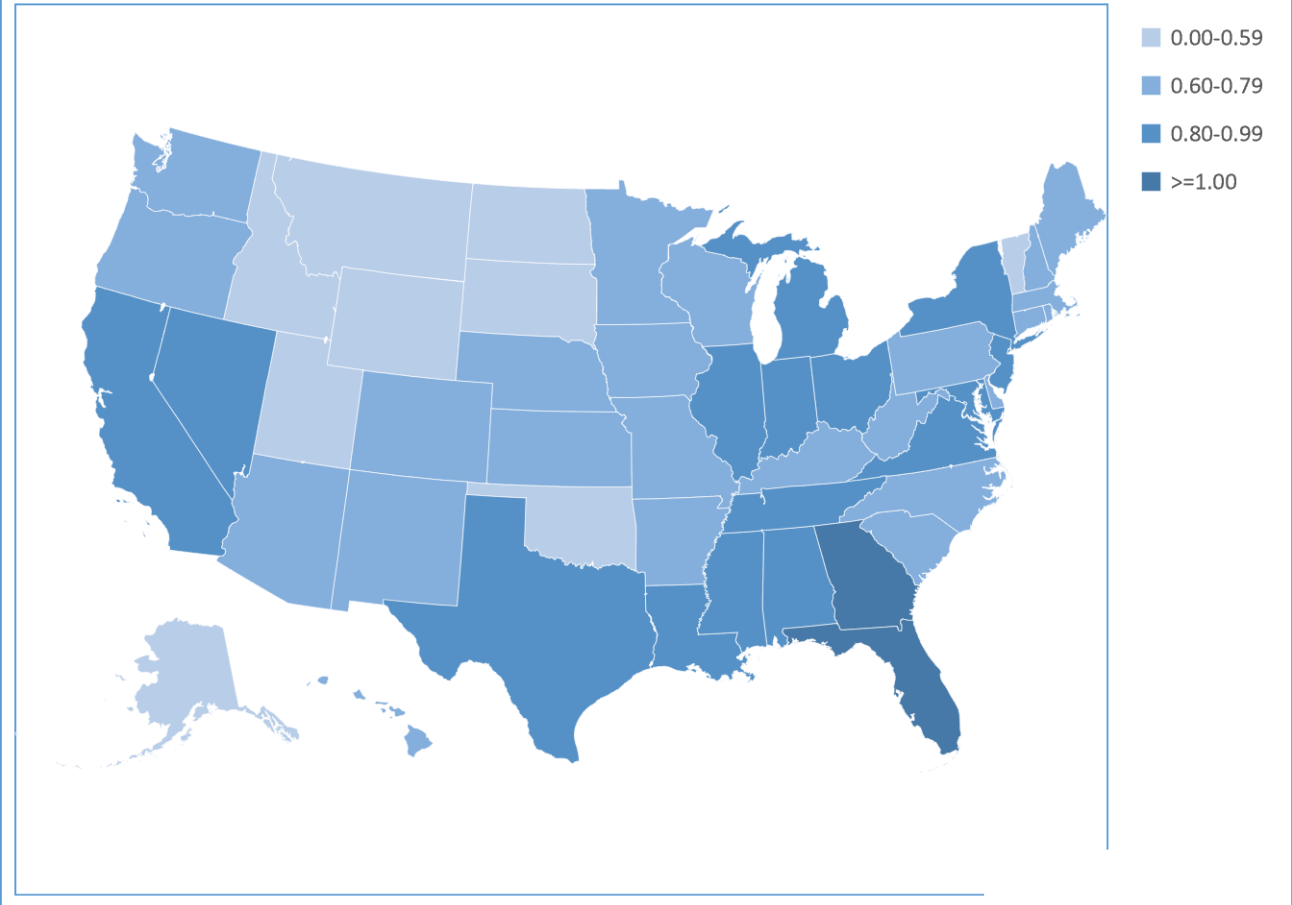


U.S. Department of Commerce
U.S. CENSUS BUREAU
census.gov

Source: 2017 NES-D

www.census.gov/programs-surveys/abs.html

Ratio of Nonemployer Minority Ownership Share to Minority Adult Population Share



Source: [U.S. Census Bureau](http://www.census.gov), 2017 NES-D and American Community Survey.



Illustration of ABS Demo Results

