

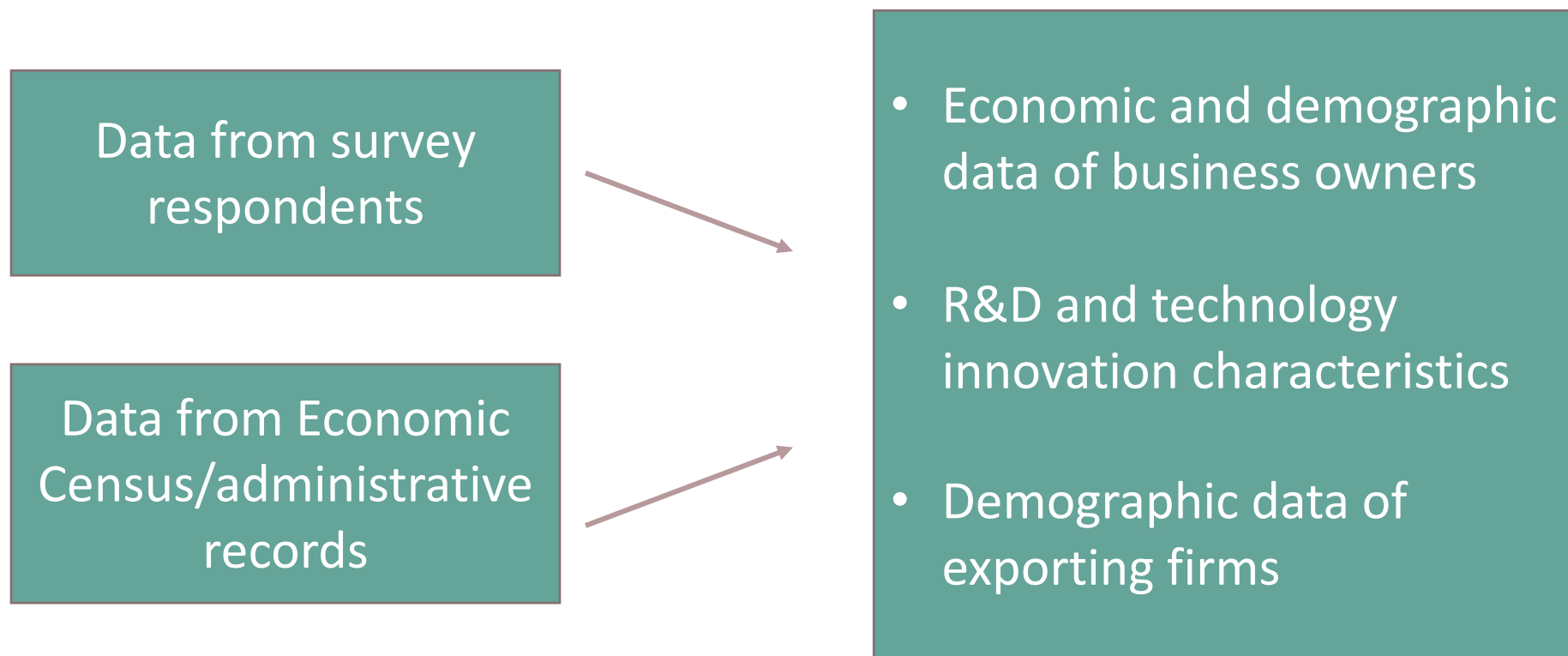
CIVIC DIGITAL FELLOWSHIP

Building Data Visualization Products for the Annual Business Survey Program

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Economic Reimbursable Surveys Division

About the Annual Business Survey (ABS)



Co-sponsored by National Center for Science and Engineering Statistics within the National Science Foundation

I work at the Chamber of Commerce in Columbus, Ohio. I am trying to understand the number of female and minority-owned businesses in our city.

-a common data user request

Data User Question: How can I find the data I need?

The screenshot shows the United States Census Bureau data portal interface. At the top, there is a search bar and navigation tabs for All, Tables, Maps, and Pages. The 'Tables' tab is selected. Below the navigation, the breadcrumb path is // Search / Tables / AB1800CSCBO. The main heading is 'Annual Business Survey: Owner Characteristics of Respondent Employer Firms by Sector, Sex, Ethnicity, Race, and Veteran Status for the U.S., States and Metro Areas: 2018'. Below this, the survey/program is Economic Surveys, TableID is AB1800CSCBO, Year is 2018, and Dataset is ABSCBO2018. A toolbar contains various icons for Notes, Selections, Geos, Years, Topics, Surveys, Codes, Hide, Transpose, Restore, Excel, Download, Print, More Data, and Map. The main content area displays a message: 'Sorry, that table is too large to display. The size of this table may exceed your browser's capabilities and may result in error or browser instability. Download the entire data or adjust your filters in the toolbar for a smaller table.' Below the message are two buttons: 'DOWNLOAD TABLE' and 'FILTER RESULTS'. At the bottom, it says 'To proceed with the table display anyway, open the table.' On the right side, there is a 'Filters' panel with a list of filter categories: Sex code, Meaning of Sex code, Ethnicity code, Meaning of Ethnicity code, Race code, Meaning of Race code, Veteran code, and Meaning of Veteran code.

Display message data users see when trying to open certain ABS tables

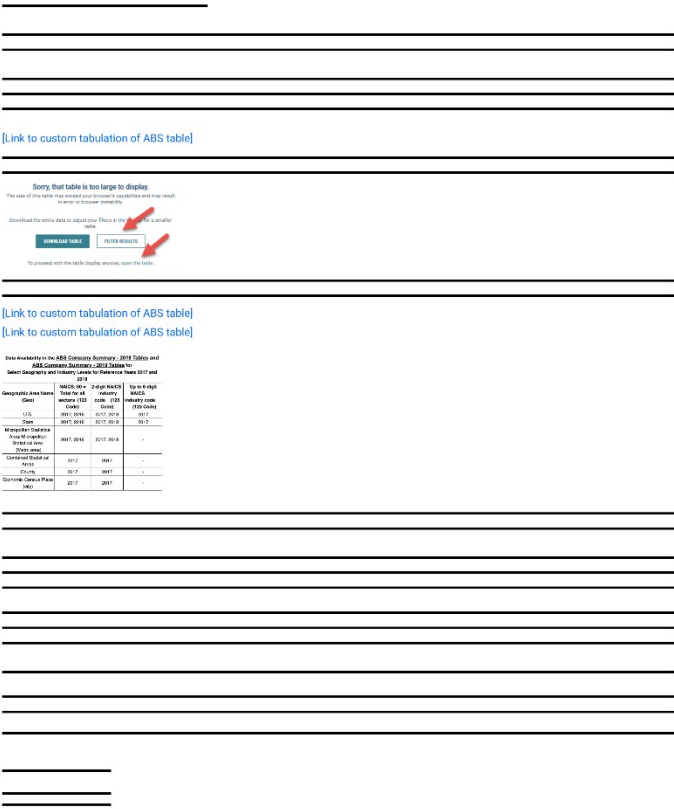
| Size of Data Tables (row counts) | | |
|-------------------------------------|-----------|---------|
| | 2017 | 2018 |
| Company Summary Tables | 1,596,807 | 252,880 |
| Characteristics of Businesses | 2,757,767 | 68,028 |
| Characteristics of Business Owners | 2,218,145 | 151,612 |
| US Exporting Firms by Demographics | 5,100 | --- |

Context: some of the ABS tables are too large to open without filters

Data User Question: Why can't I find county data for 2018?

| Data Available by Year | | | |
|---------------------------|--|---|---|
| | Survey Years Ending in “2” or “7” (aligned with Economic Census) | 2018 | All other survey years |
| Geography Level Available | U.S., 50 States and District of Columbia, MSA, CSA, County, Economic Place, and Metropolitan Divisions | U.S., 50 States and District of Columbia, MSA | U.S., 50 States and District of Columbia, MSA |
| NAICS Code Available | 2-6 digits | 2 digits | 3 digits |

ABS is an exciting survey that’s continuously offering more to its data users...but how can we make it clear what data is available in a given year?



Example email response template from ABS team to data users

Project Objectives

Data users have **trouble accessing** the data they need.



ABS team needs to **spend time** explaining the different tables to data users.

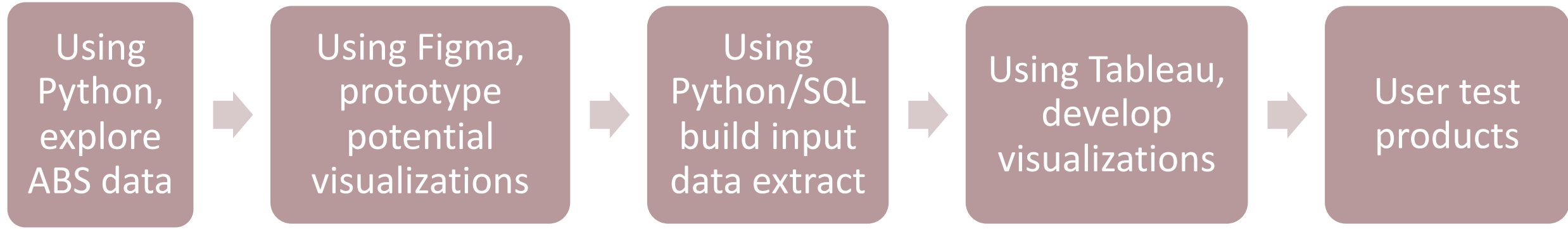


ABS data is **underutilized**.



- Design and build a Data Explorer tool that displays high-level info about the demographics of employer firm owners and takes users to the data they need
- Envision and build exploratory visualization products for ABS data tables

Methodology



Sample Screenshots of Visualization Iterations

Annual Business Survey: Characteristics of Business Owners

This tool provides insight into characteristics of business owners such as field of education, age of owner, and more. Select a characteristic using the navigation bar below.

| Reasons Owned | Education Field | Education Level | Owner Age | Year Acquired |
|---------------|-----------------|-----------------|-----------|---------------|
|---------------|-----------------|-----------------|-----------|---------------|

Year
2018

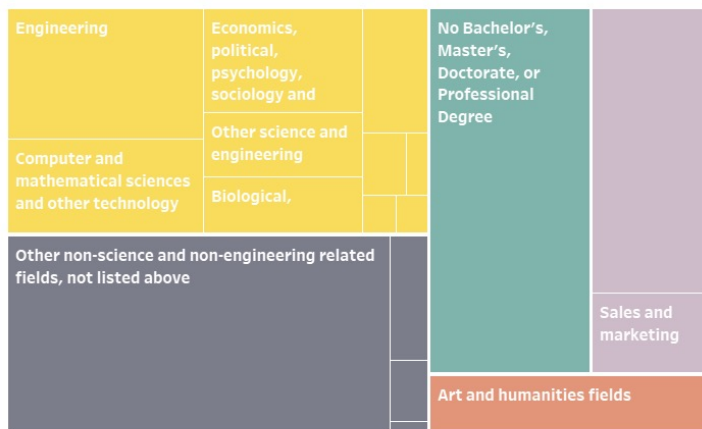
Education Category

- Arts and Humanities
- Business
- No Bachelor's, Master's, Doctorat..
- Other
- Science or Engineering

Select Industry
Professional, scientific, and te...

Fields of Education Pursued by Business Owners

Industry: Professional, scientific, and technical services



Annual Business Survey: Characteristics of Business Owners

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| Reasons Owned | Education Field | Education Level | Owner Age | Year Acquired |
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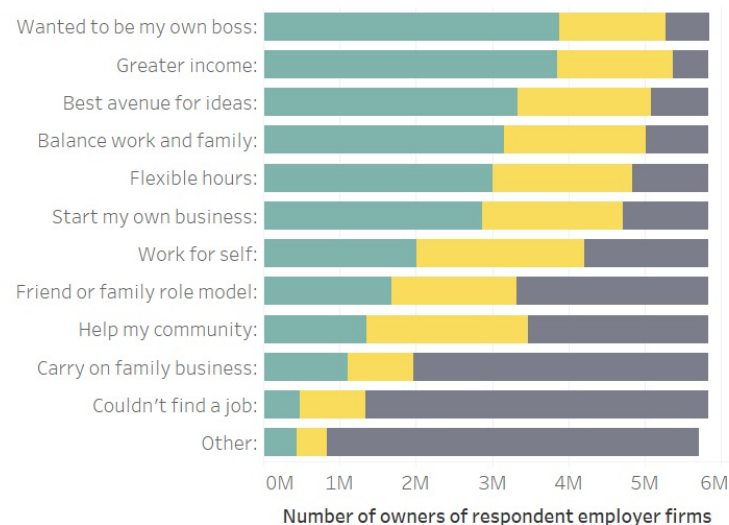
Year
2017

Select Demographic
Sex

Importance Response

- Not Important
- Somewhat Important
- Very Important

Reasons For Owning Business



Annual Business Survey Data Explorer

Data Explorer

About ABS

How To Use This Tool

Select Geography Level

United States

State

Metro Area

County

Economic Place

Select Reference Year

2018

Select NAICS

31-33 - Manufacturing

At a Glance: In 2018, employer firms in the United States with NAICS code 31-33 were...

14.89%

Female-Owned

9.47%

Minority-Owned

6.82%

Veteran-Owned

Select Table

- ☒ Company Summary
- ☐ Characteristics of Businesses
- ☐ Characteristics of Business Owners

Select Dimension

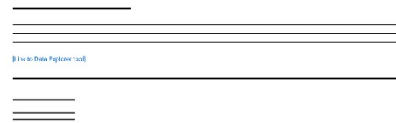
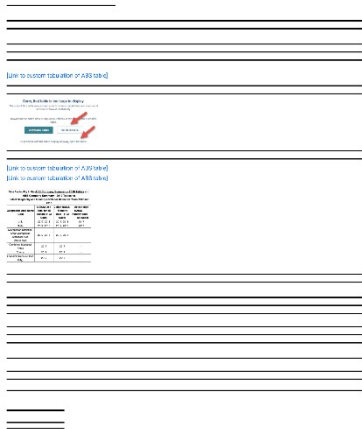
- ☒ None
- ☐ Years in Business
- ☐ Receipts Size of Firm
- ☐ Employment Size of Firm

Explore Data

Use the Explore Data button to access the ABS table with the given selections on census.gov.

Benefits

- ✓ **Save time** for ABS team
- ✓ **Increase public engagement** with ABS data



Before and After! Email responses to ABS Data Users

Next Steps

How can the Census Bureau make it **easier** for the public to **engage** with its data?

When building data visualization products, how can we think about **scalability** and **collaboration** with other programs while still retaining the rich context of a particular survey program?