



EEOC Explore

User Guide

PREPARED FOR EEOC BY:
NORC at the University of Chicago
55 East Monroe Street
20th Floor
Chicago, IL 60603
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Introduction

This document can be referenced to aid in the use of EEOC Explore. EEOC Explore is an interactive data query and mapping tool that gives users access to the most current, granular, and privacy protected aggregate EEO-1 data publicly available. EEOC Explore allows users to analyze aggregate data associated with more than 56 million employees and 73,000 employers nationwide. The user-friendly tool enables stakeholders to explore and compare data trends across a number of categories, including location, sex, race and ethnicity, and industry sector without the need for experience in computer programming or statistical analysis.

As part of its mandate under Title VII of the Civil Rights Act of 1964, as amended, public and private employers, as well as local referral unions are required to submit to EEOC periodic reports which indicate the composition of their workforces by sex and race/ethnicity. EEOC Explore visualizes these aggregate data in ways that are more intuitive and efficient than previous methods. The tool uses aggregate information from employer EEO-1 reports which include data such as employee demographics, which are collected annually from private employers with 100 or more employees and federal contractors with 50 or more employees. EEOC Explore also allows users to dive down to county-level details, surpassing the previously available static tabular format available on EEOC's public website.

EEOC Explore Overview

Features

EEOC Explore was developed by using Tableau software. The following features have been implemented in the initial release of EEOC Explore:

- Five Interactive Dashboards. Each dashboard provides a specific view of data using relevant maps and graphs.
- Dynamic Visual Graphs that respond to filter(s) and action(s) on maps.
- Filter and sort data
- View details about specific data points through Tooltips
- Select marks to highlight data points in the view
- Time Trends

- Comparison between geographic locations
- Legends & Dynamic Titles
- Export screen display to PDF
- Download underlying data from a visual objects

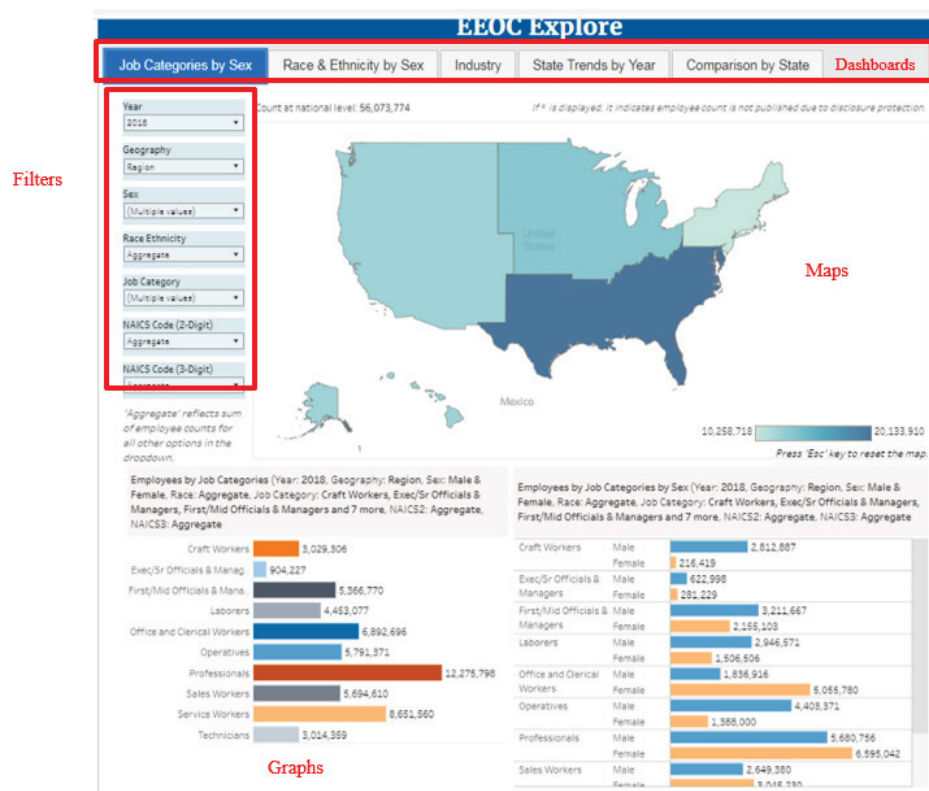
Source Data

EEOC Explore uses de-identified Public Use Files (PUF) as the source data. The PUF files contain aggregated employee counts at various geographies, from national to county levels. Employment aggregates are categorized by sex, race, job, industry, and geographic areas. The files were processed through a series of data protection techniques to suppress identifiable information. As a result, employees and employers are protected in the released data. There are two years of de-identified PUF datasets available for download by using the links above EEOC Explore.

User Interface

EEOC Explore uses integrated dashboards for displaying data. As shown in Figure 1, dashboards are displayed as tabs along the top panel of the user interface and the filters are shown along the left panel of the screen. Maps and graphs present information based on selected filter(s) within the domain of each dashboard.

Figure 1. General Screen Layout



There are two ways of visualizing data on each dashboard:

- 1) Navigation through Filters: A change in a filter can affect both maps and graphs.
- 2) Navigation through 'Geo Actions': User actions on maps can change information on graphs for a given set of filters.

Dashboards

The Following five dashboards have been created for EEOC Explore:

- 1) Job Categories by Sex
- 2) Race & Ethnicity by Sex
- 3) Industry
- 4) State Trends by Year
- 5) Comparison by State

A brief description of each dashboard is provided below:

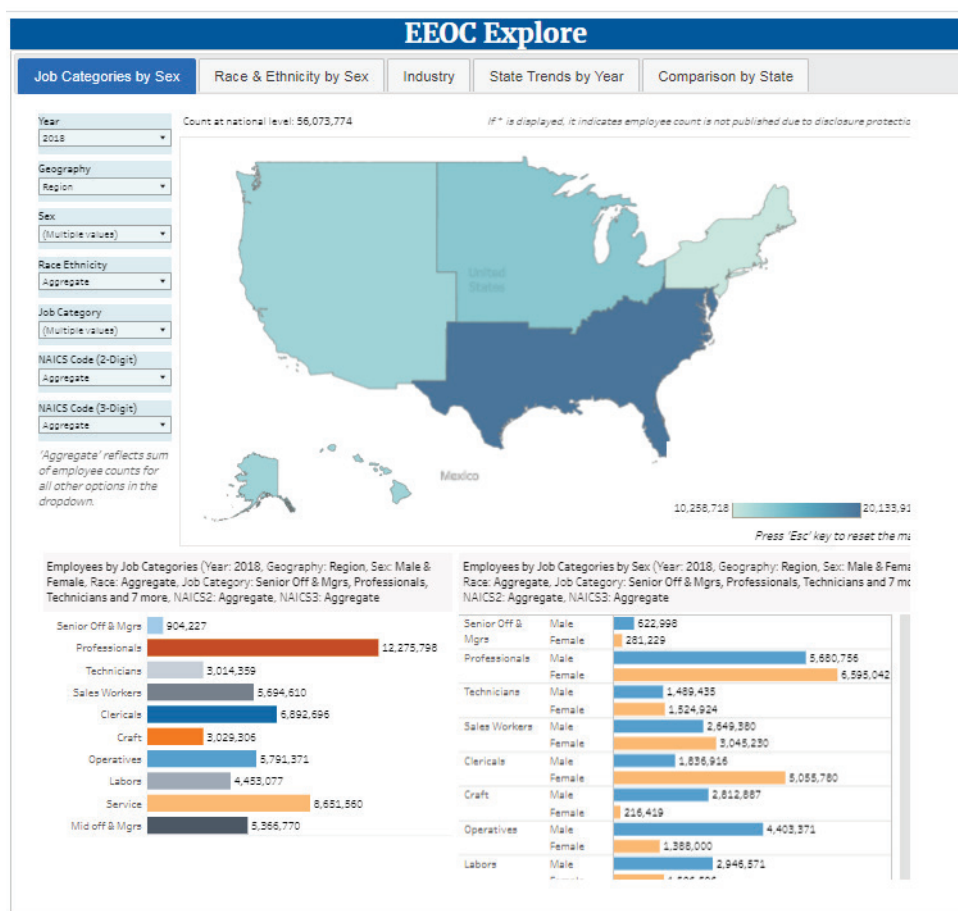
1) Job Category by Sex:

This dashboard displays counts of employees for:

- a) Employees by Job Categories
- b) Employees by Job Categories by Sex

Figure 2 shows the layout of this dashboard:

Figure 2. Screen Layout for the Job Category by Sex Dashboard



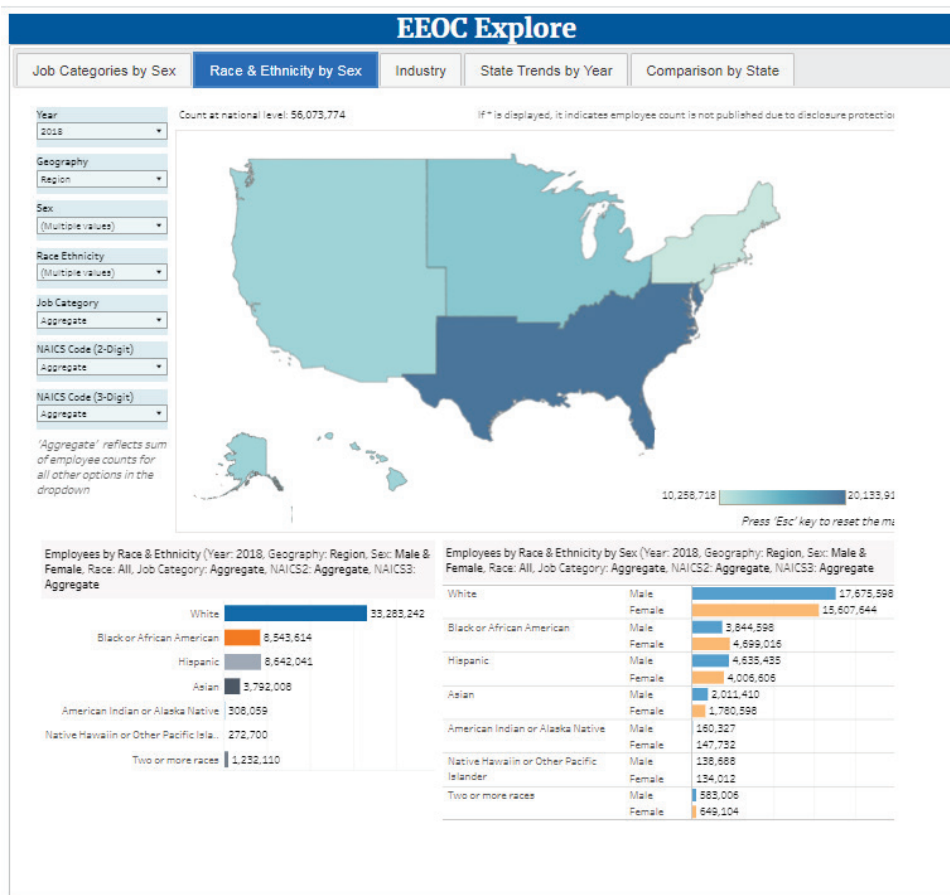
2) Race & Ethnicity by Sex:

This dashboard shows employee count displays counts of employees for:

- a) Employees by Race & Ethnicity
- b) Employees by Race & Ethnicity by Sex

Figure 3 shows an example of this dashboard:

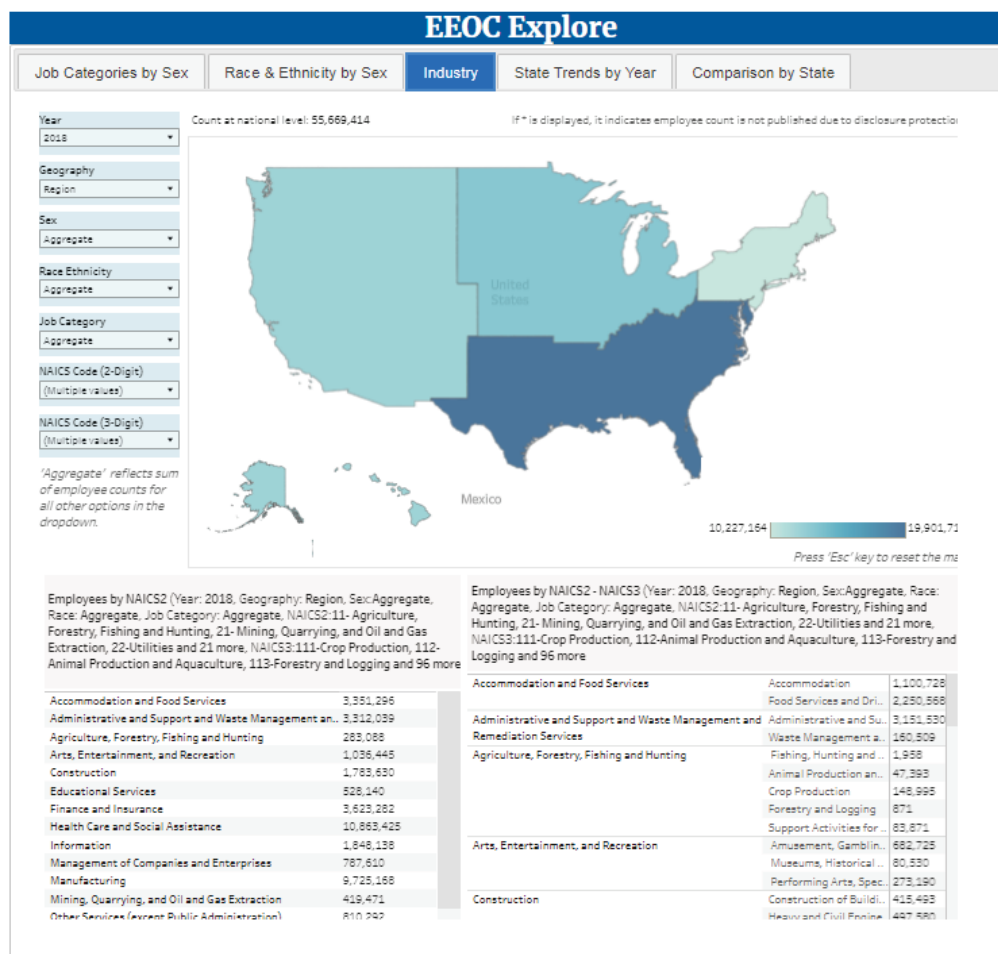
Figure 3. Screen Layout for the Race & Ethnicity by Sex Dashboard



3) Industry:

This dashboard shows employee distribution by 2-digit and 3-digit NAICS Codes.

Figure 4 shows an example of this dashboard:

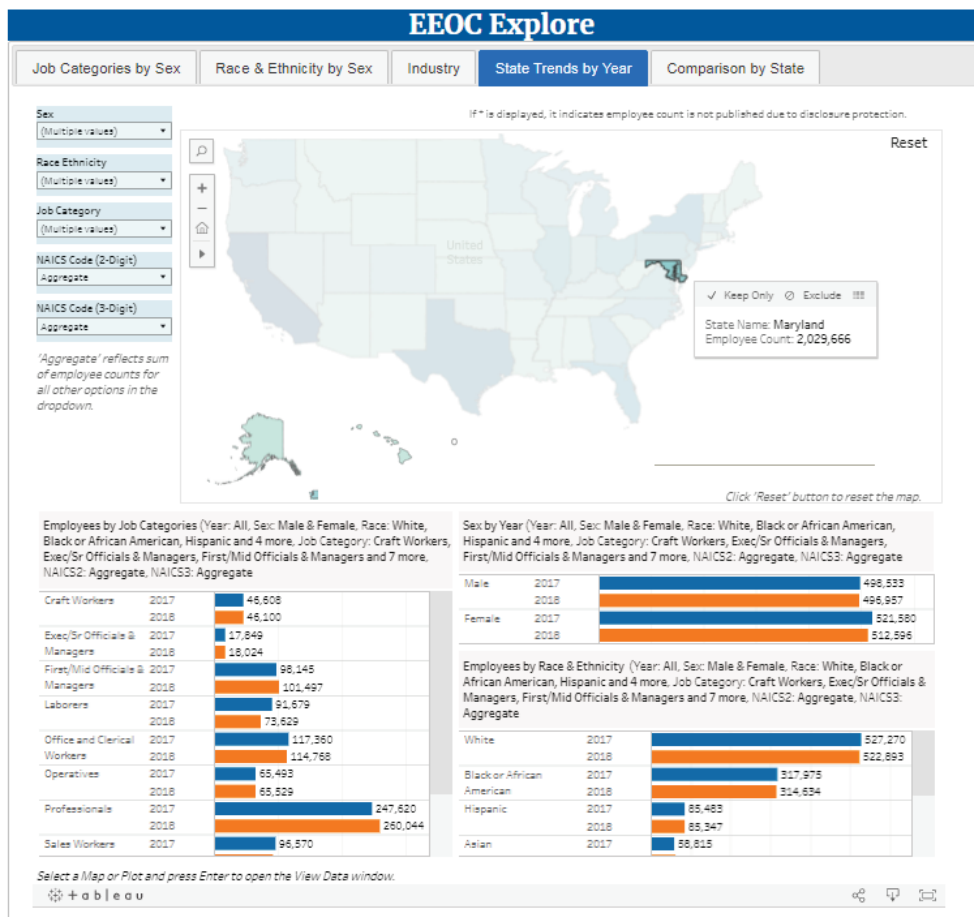
Figure 4. Screen Layout for the Industry Dashboard

4) State Trends by Year:

This dashboard compares data between years for selected filters. Three graphs are generated on this dashboard:

- Employees by Job Categories
- Sex by Year
- Employees by Race and Ethnicity

As shown on Figure 5, this dashboard does not offer Year as a filter as the comparison is performed between years.

Figure 5. Screen Layout for the State Trends by Year Dashboard

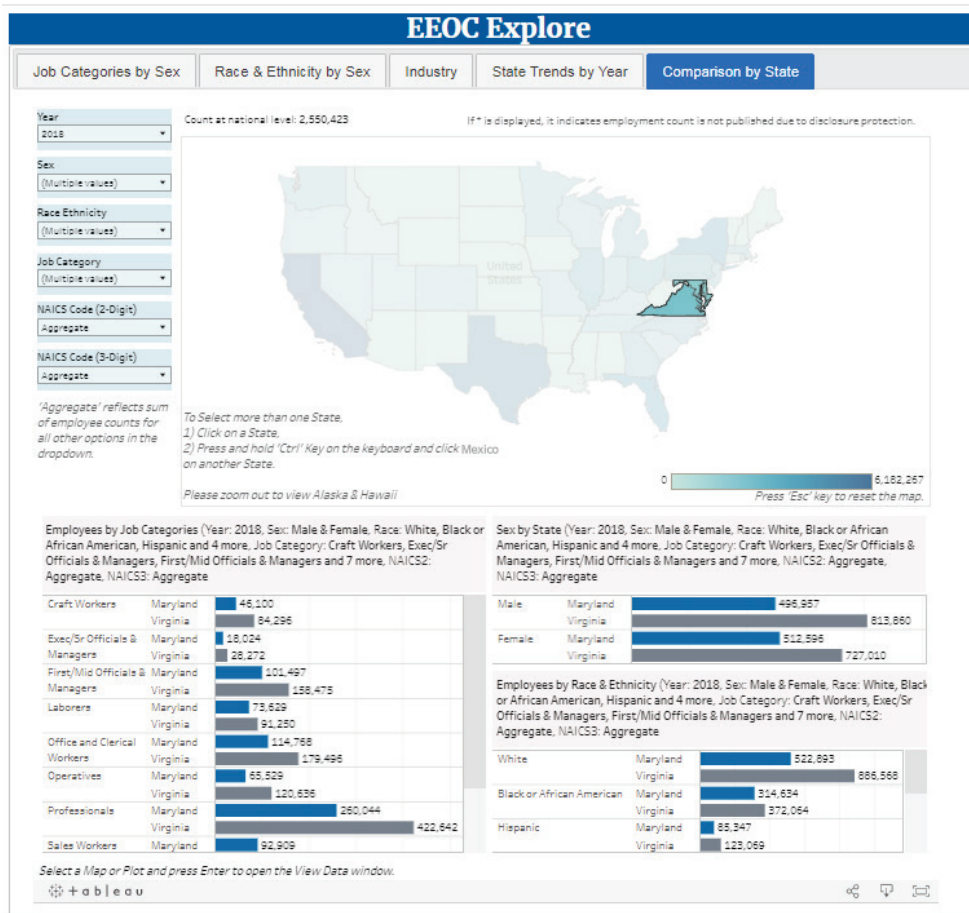
5) Comparison by State:

This dashboard shows information for multiple States based on selected filters. The process of selecting more than one State is described below:

- Click on a State
- Press and hold 'Ctrl' key on the keyboard and click on another State
- Release 'Ctrl' key on the keyboard
- Repeat steps (b) and (c) until all desired States are selected

As shown in Figure 6, following three graphs are generated on this dashboard:

- Employees by Job Categories
- Sex by State
- Employees by Race & Ethnicity

Figure 6. Screen Layout for the Comparison by State Dashboard

Filters

Following filters are available in the current version of this application:

1. Year
2. Geography
3. Sex
4. Race Ethnicity
5. Job Category
6. NAICS Code (2-Digit)
7. NAICS Code (3-digit)

Year and Geography filters allow one value at a time while other filters allow multiple selection of values from dropdown lists.

All multi-selection dropdowns have an option called 'Aggregate'. When this option is selected, the output reflects the sum of other options presented in the dropdown. This strategy allows more data to be published in the public domain. For example, let us assume that there are 5 Females and 20 Males for a given combination of filters. The 'Aggregate' is 25. The de-identification algorithm may flag individual sex categories (Male, Female) as non-publishable to protect the identity of employees, but the aggregated value for the same set of filters can be published. In this situation, when a user selects Male or Female or both, the output will show * (asterisk) to suppress identifiable information, but when the user deselects both Male and Female, and selects the 'Aggregate' option, the output will show employee counts for publishable data. Since the 'Aggregate' option combines employee counts of other options, a user should not select any other option within the dropdown when 'Aggregate' option is selected.

A brief description of each filter is provided below:

1. **Year:** The default value is the most recent year in the database. This filter is not available on Dashboard #4 (State Trends by Year) as the visualization shows values from all years loaded in the database. In the current release, available options for selection are:
 - 2018
 - 2017
2. **Geography:** Default: Region
Available options for selection:
 - Region
 - Division
 - State
 - CBSA (Core Based Statistical Area)
 - County
3. **Sex:** Default: (Male and Female)
Available options for selection:
 - Female
 - Male
 - Aggregate

4. **Race Ethnicity:** Default: (All Race Ethnicity)

Available options for selection:

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Native Hawaiian or Other Pacific Islander
- Two or more Races
- White
- Aggregate

5. **Job Category:** Default: (All Job Categories)

Available options for selection:

- Administrative
- Craft
- Executive / Senior Level
- First / Mid Level
- Laborers / Helpers
- Operatives
- Professionals
- Sales Workers
- Service Workers
- Technicians
- Aggregate

Description of each Job Category is available in Appendix 1.

6. **NAICS Code (2-Digit):** Default: (Aggregate)

Available options for selection:

- 11 Agriculture, Forestry, Fishing and Hunting
- 21 Mining, Quarrying, and Oil and Gas Extraction
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing

- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative & Support and Waste Management & Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)
- 92 Public Administration
- Aggregate

7. NAICS Code (3-digit): Default: (Aggregate)

Twenty two-digit NAICS Sector codes are expanded to three-digit Subsector codes. When a user selects a specific code in the NAICS-2 dropdown, the system will show only the relevant codes in the NAICS-3 dropdown. In order to select specific NAICS-3 options the user will need to uncheck 'Aggregate' and select one or more three digit codes from the dropdown.

After selecting both NAICS two and three digits codes, these dropdowns may be initialized by using a filter icon on the top right corner of the box or by selecting 'Aggregate' option in the NAICS (3-digit) dropdown. This action will populate NAICS (2-digit) with all available options.

It is very important to remember that a user needs to uncheck 'Aggregate', and then select desired value(s) from a filter dropdown.

Recommended Sequence of Activities

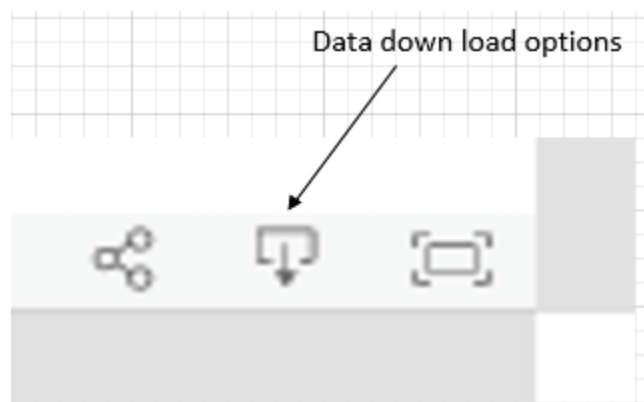
Although a user can apply filter(s) in random order of sequence, following steps (in sequence) can make the data visualization process very efficient:

1. Develop a strategy based on question(s) that need to be answered.
2. Select a Dashboard.
3. Enter Filter(s) in sequence starting from the top of the list. Remember to uncheck 'Aggregate' when any other filter is selected.
4. Drill down on map if needed.
5. Use Tooltip on the map and/or values on the graph(s) to extract necessary information.
6. Remember that a question may require use of multiple dashboards. Use logical sequence for dividing a complex problem into smaller segments.

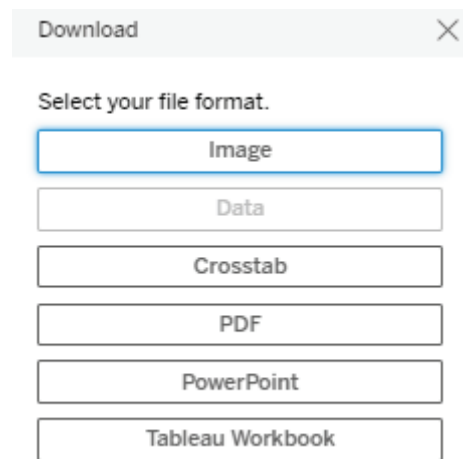
Data Download options

Data and objects can be downloaded in several ways. The data window can be opened by clicking on the Control+Shift+Enter keys simultaneously when the focus is on the map or plot objects. This instruction is provided by a screen reader as well.

A button for download options is available along the bottom right corner of the screen as shown below. A keyboard user can use the Tab key to go to the Tableau logo on the bottom left corner of the screen, and then use the Right Arrow key to reach this download button,



When the download button is clicked or selected (and entered) by a keyboard, following options are presented to the user:



Scenarios

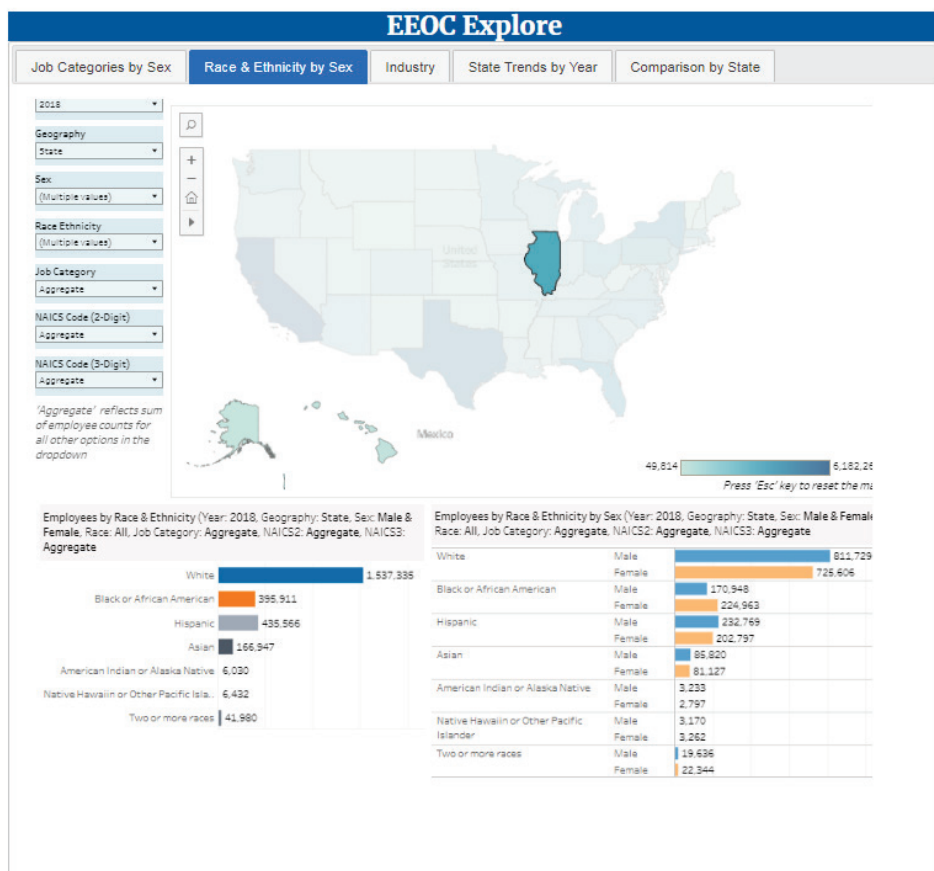
The following simulated scenarios are designed to introduce basic features and serve as a quick start guide on using each dashboard.

Scenario 1

A researcher is writing a paper on employment characteristics in Illinois. The researcher is interested to know the distribution of employees by Race, Ethnicity and Sex across all industries in 2018.

Steps:

- ➔ Select 2nd tab (Race & Ethnicity by Sex)
- ➔ On the left panel, select following filters:
 - Year: 2018
 - Geography: State
 - Sex: Uncheck 'Aggregate', then check 'Male' and 'Female'
 - Race Ethnicity: Uncheck 'Aggregate', then check all other options
 - Job Category: Check 'Aggregate', uncheck all other options
 - NAICS Code (2-Digit): Check 'Aggregate', uncheck all other options
 - NAICS Code (3-Digit): Check 'Aggregate', uncheck all other options
- ➔ Click on the State of Illinois. Following visualization along with employee count should appear.

Figure 7. Visualization for Scenario 1

Scenario 2

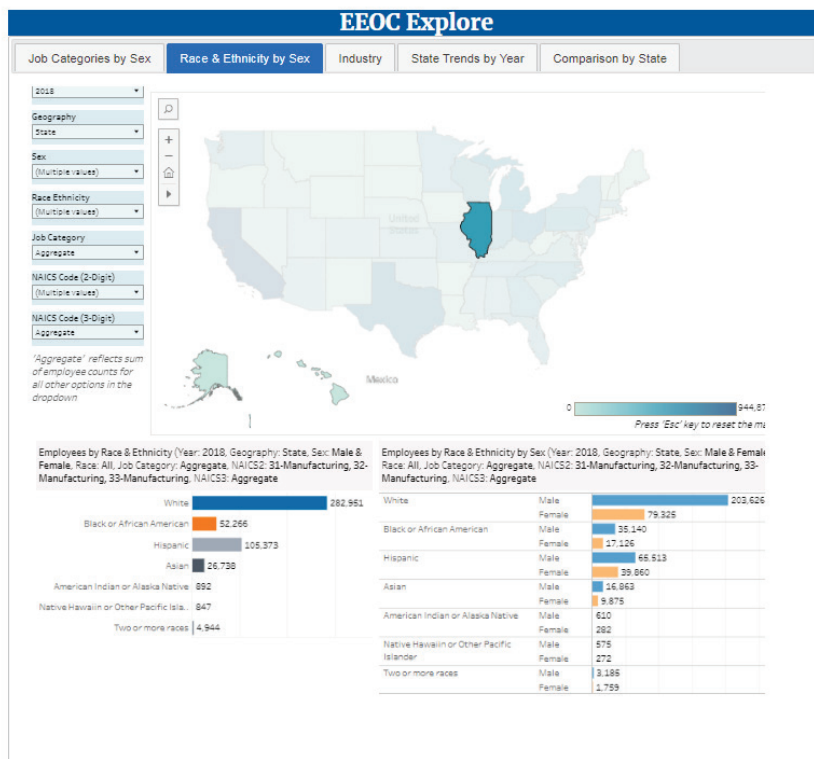
The researcher of Scenario 1 wants to focus on the manufacturing sector to understand employee characteristics across Race & Ethnicity by Sex.

Steps:

- ➔ Continue from the end of Scenario 1.
- ➔ In the NAICS (2-digit) dropdown, uncheck 'Aggregate' and select codes 31, 32, and 33.
- ➔ In the NAICS (3 digit) dropdown, Check 'Aggregate' This box should only show appropriate three-digit codes that are linked with selected two digit codes selected in the NAICS (2 digit) dropdown.

- ➔ Click on the 'Apply' button after selections are checked. Following visualization should appear on the screen. It should be noted that the output of query returns values of employment in the manufacturing industry.

Figure 8. Visualization for Scenario 2



Accessibility

EEOC Explore supports screen readers for blind and visually impaired individuals so that they can independently interact with the application. A free version of the NVDA screen reader software can be downloaded from the following site:

<https://www.nvaccess.org/download/>

For additional information on the NVDA software and system requirements, please visit:

<https://www.nvaccess.org/about-nvda/>

NVDA quick reference command keys information is available at:

<https://www.nvaccess.org/files/nvdaTracAttachments/455/keycommands%20with%20lap%20keyboard%20layout.html>

A key board can be used for navigating through objects on the user interface as well.

Comments and Feedback

EEOC Explore has been developed as a prototype to modernize the data dissemination process. This application is expected to be upgraded in the future to meet user expectations. Please feel free to send your comments at: OEDA@EEOC.GOV.

Appendix 1. Description of EEO-1 Job Categories

Source: <https://www.eeoc.gov/employers/eeo-1-survey/eeo-1-instruction-booklet>

The major job categories are listed below, including a brief description of the skills and training required for occupations in that category and examples of the job titles that fit each category. The examples shown below are illustrative and not intended to be exhaustive of all job titles in a job category. These job categories are primarily based on the average skill level, knowledge, and responsibility involved in each occupation within the job category.

The Officials and Managers category as a whole is to be divided into the following two subcategories: Executive/Senior Level Officials and Managers, and First/Mid Level Officials and Managers. These subcategories are intended to mirror the employers own well established hierarchy of management positions. Small employers who may not have two well-defined hierarchical steps of management should report their management employees in the appropriate categories.

Executive/Senior Level Officials and Managers. Individuals who plan, direct and formulate policies, set strategy and provide the overall direction of enterprises/organizations for the development and delivery of products or services, within the parameters approved by boards of directors or other governing bodies. Residing in the highest levels of organizations, these executives plan, direct or coordinate activities with the support of subordinate executives and staff managers. They include, in larger organizations, those individuals within two reporting levels of the CEO, whose responsibilities require frequent interaction with the CEO. Examples of these kinds of managers are: chief executive officers, chief operating officers, chief financial officers, line of business heads, presidents or executive vice presidents of functional areas or operating groups, chief information officers, chief human resources officers, chief marketing officers, chief legal officers, management directors and managing partners.

First/Mid Level Officials and Managers. Individuals who serve as managers, other than those who serve as Executive/Senior Level Officials and Managers, including those who oversee and direct the delivery of products, services or functions at group, regional or divisional levels of organizations. These managers receive directions from the Executive/Senior Level management and typically lead major business units. They implement policies, programs and directives of executive/senior management through subordinate managers and within the parameters set by Executive/Senior Level management. Examples of these kinds of managers are: vice presidents and directors, group, regional or divisional controllers; treasurers; human resources, information systems, marketing, and operations managers. The First/Mid Level Officials and Managers subcategory also includes those who report directly to middle managers. These individuals serve at functional, line of business segment or branch levels and are responsible for directing and executing the day-to-day operational objectives of enterprises/organizations, conveying the directions of higher level officials and managers to

subordinate personnel and, in some instances, directly supervising the activities of exempt and non-exempt personnel. Examples of these kinds of managers are: first-line managers; team managers; unit managers; operations and production managers; branch managers; administrative services managers; purchasing and transportation managers; storage and distribution managers; call center or customer service managers; technical support managers; and brand or product managers.

Professionals. Most jobs in this category require bachelor and graduate degrees, and/or professional certification. In some instances, comparable experience may establish a person's qualifications. Examples of these kinds of positions include: accountants and auditors; airplane pilots and flight engineers; architects; artists; chemists; computer programmers; designers; dietitians; editors; engineers; lawyers; librarians; mathematical scientists; natural scientists; registered nurses; physical scientists; physicians and surgeons; social scientists; teachers; and surveyors.

Technicians. Jobs in this category include activities that require applied scientific skills, usually obtained by post-secondary education of varying lengths, depending on the particular occupation, recognizing that in some instances additional training, certification, or comparable experience is required. Examples of these types of positions include: drafters; emergency medical technicians; chemical technicians; and broadcast and sound engineering technicians.

Sales Workers. These jobs include non-managerial activities that wholly and primarily involve direct sales. Examples of these types of positions include: advertising sales agents; insurance sales agents; real estate brokers and sales agents; wholesale sales representatives; securities, commodities, and financial services sales agents; telemarketers; demonstrators; retail salespersons; counter and rental clerks; and cashiers.

Administrative Support Workers. These jobs involve non-managerial tasks providing administrative and support assistance, primarily in office settings. Examples of these types of positions include: office and administrative support workers; bookkeeping; accounting and auditing clerks; cargo and freight agents; dispatchers; couriers; data entry keyers; computer operators; shipping, receiving and traffic clerks; word processors and typists; proofreaders; desktop publishers; and general office clerks.

Craft Workers (formerly Craft Workers (Skilled)). Most jobs in this category include higher skilled occupations in construction (building trades craft workers and their formal apprentices) and natural resource extraction workers. Examples of these types of positions include: boilermakers; brick and stone masons; carpenters; electricians; painters (both construction and maintenance); glaziers; pipelayers, plumbers, pipefitters and steamfitters; plasterers; roofers; elevator installers; earth drillers; derrick operators; oil and gas rotary drill operators; and blasters and explosive workers. This category also includes occupations related to the installation, maintenance and part replacement of equipment, machines and tools, such as: automotive

mechanics; aircraft mechanics; and electric and electronic equipment repairers. This category also includes some production occupations that are distinguished by the high degree of skill and precision required to perform them, based on clearly defined task specifications, such as: millwrights; etchers and engravers; tool and die makers; and pattern makers.

Operatives (formerly Operatives (Semi-skilled)). Most jobs in this category include intermediate skilled occupations and include workers who operate machines or factory-related processing equipment. Most of these occupations do not usually require more than several months of training. Examples include: textile machine workers; laundry and dry cleaning workers; photographic process workers; weaving machine operators; electrical and electronic equipment assemblers; semiconductor processors; testers, graders and sorters; bakers; and butchers and other meat, poultry and fish processing workers. This category also includes occupations of generally intermediate skill levels that are concerned with operating and controlling equipment to facilitate the movement of people or materials, such as: bridge and lock tenders; truck, bus or taxi drivers; industrial truck and tractor (forklift) operators; parking lot attendants; sailors; conveyor operators; and hand packers and packagers.

Laborers and Helpers (formerly Laborers (Unskilled)). Jobs in this category include workers with more limited skills who require only brief training to perform tasks that require little or no independent judgment. Examples include: production and construction worker helpers; vehicle and equipment cleaners; laborers; freight, stock and material movers; service station attendants; construction laborers; refuse and recyclable materials collectors; septic tank servicers; and sewer pipe cleaners.

Service Workers. Jobs in this category include food service, cleaning service, personal service, and protective service activities. Skill may be acquired through formal training, job-related training or direct experience. Examples of food service positions include: cooks; bartenders; and other food service workers. Examples of personal service positions include: medical assistants and other healthcare support positions; hairdressers; ushers; and transportation attendants. Examples of cleaning service positions include: cleaners; janitors; and porters. Examples of protective service positions include: transit and railroad police and fire fighters; guards; private detectives and investigators.