The use of micromapST was incorporated in our visualizations and analysis to quickly identify the impact on Census unemployment, employment and Quits data over the most recent data available for all three, specifically 2019-2020. MicromapST provides an excellent approach to show impacts per state while grouping the most similar data per in this case 5 states. This approach looks at the median across all data per state and then bins like members and can be sorted by states or by specific variables. The R programing language in R Studio environment, two separate files were coded for the Census micromapST and % Change with Quits, Census employment and unemployment the first was approximately 52 lines of code the second was approximately 44 lines of code both using micromapST, data.table and tidyverse libraries.

This package uses and provides a set of polygons, for example the USStateBG border group, other countries are also available. The linked micromaST brings in data and/or statistics from a .csv file which is saved as a dataframe. A panel description is constructed using one of four types of micromap columns, selected from map , mapcum, maptail, mapmedian, of which we used map and mapmedian, two stated id columns we used short state ids, and 11 types of gyp for column graphics, including arrow, bar, cntbar, normalbar, segbar, boxplot, dot, dotconf, dotse, scatdot, ts, tsconf, in our code we used arrow and bar. The panelDesc with the dataframe and sortVar, with several flags identifying presentation order, and how the results will be listed and binned are used in the micromapST primary function. The border groups include counties, states, and several countries. [micromapST1, micromapST2]

In our case the first micromapST is binned based on states with similar changes in unemployment and employment by gender, however, due to the values in the first panel, California, Texas, New York, Florida, Illinois changes in other states, though well organized, losses the fidelity of data in lower impacted areas across the states. This still provides the best view to quickly identifying the top 5, 10, 15, etc. impacts of employment and unemployment by gender. The arrows provide direction and relative magnitude in the change visually. Kentucky is at the median of the sort, as well as how states group together and the direction over the 5 years that unemployment and employment have moved for each gender. The first panel, California, Texas, New York, Florida, Illinois are the highest impacts and then Pennsylvania, Ohio, Michigan, Georgia and North Carolina as the second panel. The second micromapST presents the % of change over the 2019-2020 for Quits, Employment and Unemployment and binned by state, however the change in Quits relative unemployment and employment shows a reduction in resignations in all states, except for Missouri, at the same time Idaho, Utah, Arizona, and South Dakota had modest increases in employment and only Alaska reported a decrease in unemployment. More analytics are needed to see how these data sets related; however, this clearly shows that in majority of states while resignations (quits) were reducing the reported unemployment were still occurring. Simply this most likely means more people were retaining their jobs going into 2021, while overall employment was slipping in all, but four states named earlier.

[micromapST1] <https://cran.r-project.org/web/packages/micromap/vignettes/Introduction_Guide.pdf>

[micromapST2] <https://rdrr.io/cran/micromapST/man/micromapST.html>

Diagram

Description automatically generatedChart

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