Summary

From 1970 to 2012, the composition of types of households in the U.S. has changed. The percentage of family households (married couples with and without children) has decreased, largely due to the increase in one-person households (women and men living alone). My visualization focuses on data related to one-person households in the U.S.: I have showed the changing demographics of one-person households over the same time period (1970 to 2012), and where in the U.S. these one-person households are located (over the years 1940 to 2000) and the percentages which are owner-occupied vs renter-occupied.

(Note that the years for the composition of types of households and demographics of one-person households are different from the years for one-person household percentages in each state. This is because I used data from two sources, which do not have the same years.)
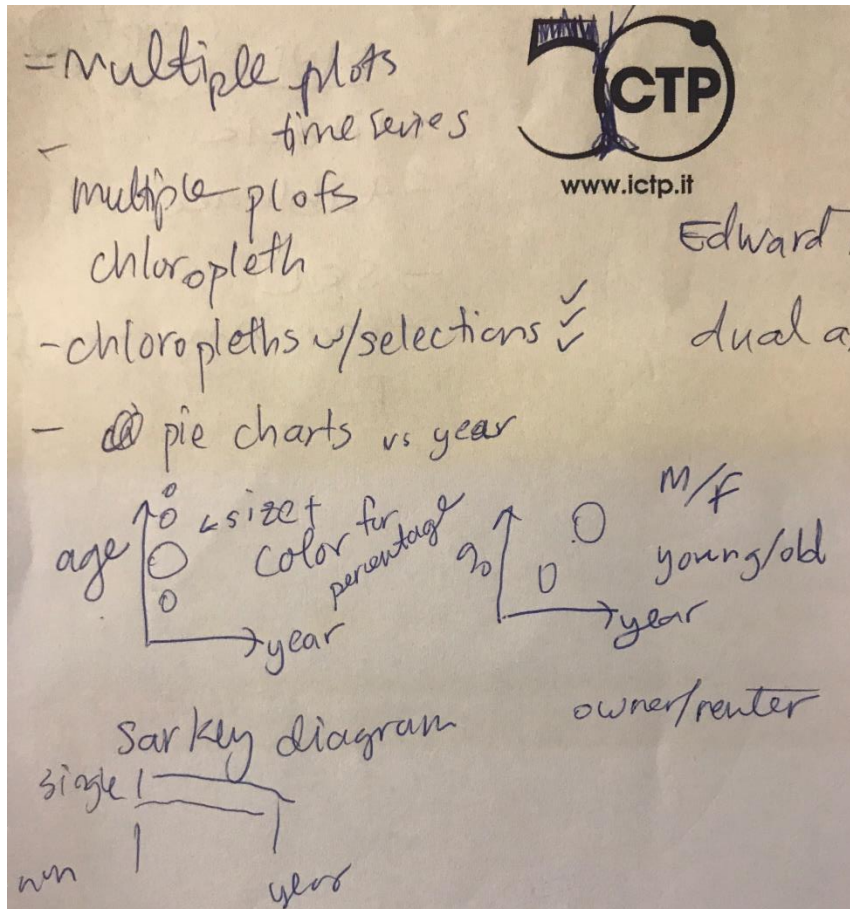
The visualization is at:
https://public.tableau.com/views/LivingAloneWhoandWhere/Story1?:embed=y&:display_count=yes

The draft visualization is at:

https://public.tableau.com/views/LivingAloneWhoandWhere_v1/Story1?:embed=y&:display_count=yes&publish=yes


Design
Initial design sketch:

In my initial design sketch, I had ideas about making a Tableau Story with small multiples with line charts and pie charts, choropleth, Sarkey diagram, and a scatter plot. I decided that simpler plots would be easier to understand. So I settled on making a choropleth for the one-person occupancy rate, slope charts for the change in type of households, a line chart for the change in demographics of one-person households, a scatter plot for renter occupied vs owner occupied and small multiples of choropleths for the renter occupied vs owner occupied.

I wanted to use a choropleth for the one-person occupancy rate as it shows how the measurement varies across geographic area, and also across time for each geographic area (with a slider for the user to select the year). I thought that a slope chart would be good for the change in types of households, as it would show the percentages of the different types of households for the different years, and the rate of change for the types of households. There will be a slider for the user to select the display years. I chose a line chart for the change in demographics, to display the trend in the demographic percentage over time. The data for women will be colored red, and the data for men will be colored blue. There will be legends for each demographic, and the width for percent difference in percentage. I chose a scatter plot for renter occupied vs owner occupied to show the correlations between the renter occupied vs owner occupied percentages. There will be data points color coded for each state, and a legend showing which color corresponds to which state. There will also be a box where the user can select the year to display data for.
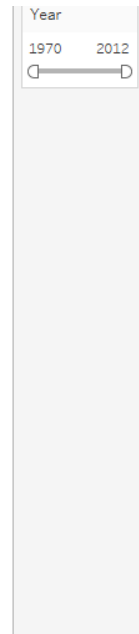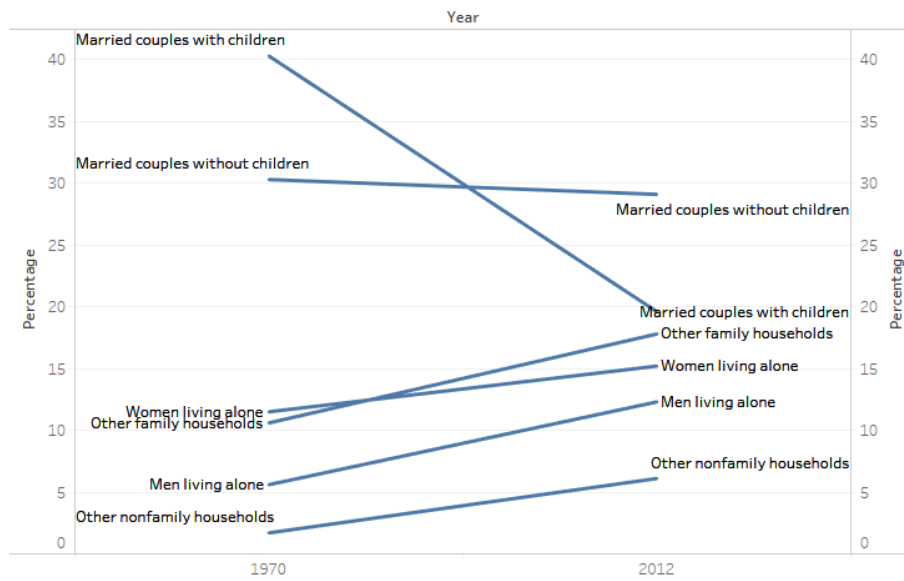
After receiving feedback, I have removed the windows (for size of % difference in change and Age and Sex legend) on the visualization showing the change in demographics for one-person households. I also put labels on the beginning and end points of each line. I changed the slope chart showing the change in type of U.S. households from 1970 to 2012 to a line chart. I also did not include the small multiple choropleth for one-person owner occupied vs renter occupied percentages for each state.

Feedback

The feedback I received for the visualization showing the change in demographics for one-person households said that I should hide the window showing Age and Sex since I had the labels at the beginning of the lines, and also put the labels on the ends of the lines. I was also given feedback that I should hide the window showing the sizes corresponding to the % difference in change.
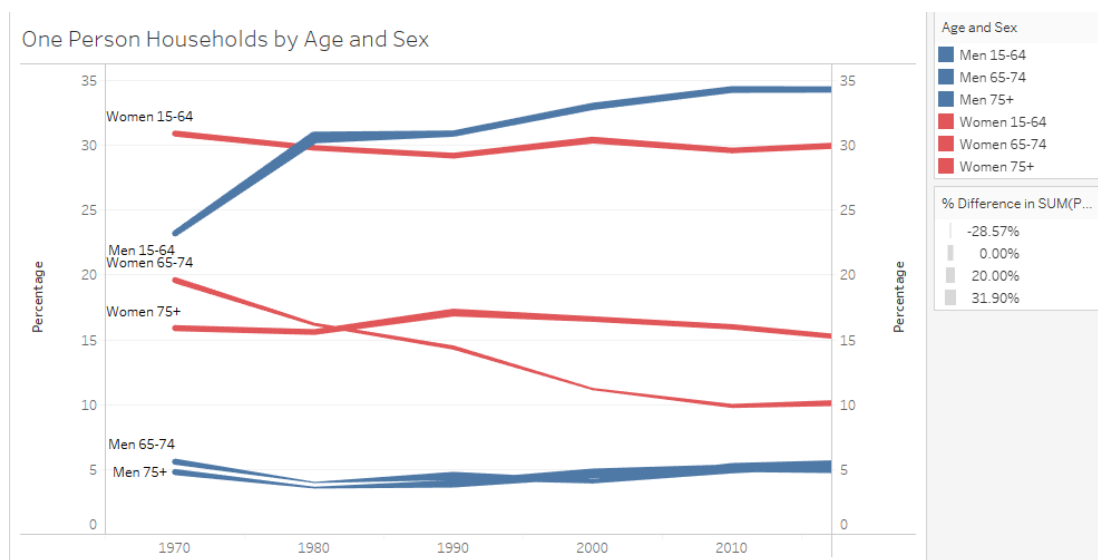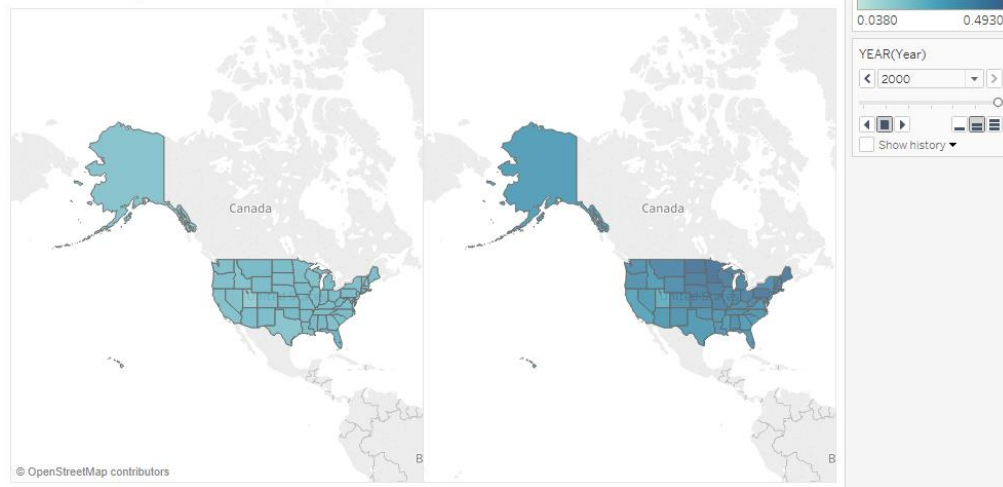

I initially had a slope chart showing the change in type of U.S. households from 1970 to 2012. The user could choose the beginning and end point years with a slider. The feedback that I received for this visualization said that this visualization was slightly misleading since the slope is only based on the two user chosen end points, and did not take into account the data for the years in between. So I have instead made a line plot that showed all of the years of data.

Sheet 4

Year

Percentage

40

35

30

25

20

15

10

5

0

40

35

30

25

20

15

10

5

0

Percentage

Married couples with children

Married couples without children

Married couples without children

Married couples with children
Other family households
Women living alone
Men living alone

Women living alone
Other family households

Men living alone

Other nonfamily households

Other nonfamily households

1970

2012

Initially, I had an owner occupied vs renter occupied small multiple choropleth where the user could choose the year for the dataset. The choropleth on the left shows the one-person owner occupied percentage in each state and the choropleth on the right shows the one-person renter occupied percentage. The feedback that I received for this visualization said that I should change the color scheme, and that the data was already well represented in the scatter plot that I had made for the same data.

Owener Occupied vs Renter Occupied

Resources
- http://gravyanecdote.com/tableau/how-to-make-a-slope-chart-in-tableau/
- https://www.tableau.com/about/blog/2016/9/how-add-vertical-lines-slope-graphs-multiple-measures-59632
- http://sirvizalot.blogspot.com/2016/03/color-popularity-for-new-cars-2000-2015.html

Datasets
- https://www.census.gov/hhes/www/housing/census/historic/livalone.html
- https://www.census.gov/prod/2013pubs/p20-570.pdf