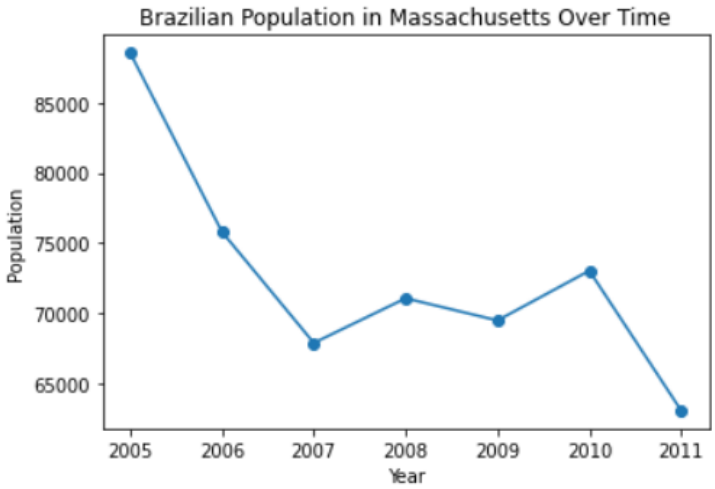
Team 1: Final Report

Project: **BPDA | Brazilian Community Census Analysis**
Members: **Carter Vande Moore, Simon Lu, Angela Tran, Andrew Tuckman**
Due Date: **12/15**

This includes all visualizations, results, data, and code, along with proper documentation on how to reproduce our results, compile and use our codebase, and navigate our dataset.

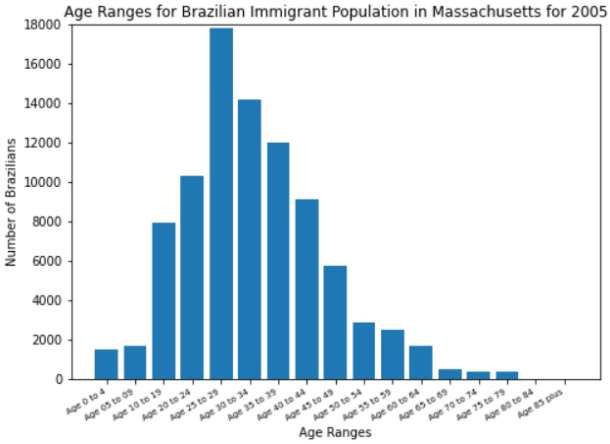
Visualizations and Results

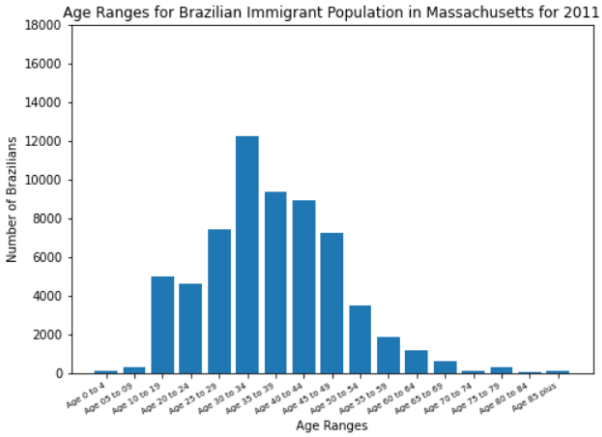
Population



Between 2005-2001, there was a decrease in the Brazilian population within Massachusetts from about 90,000 to just under 65,000.

Age

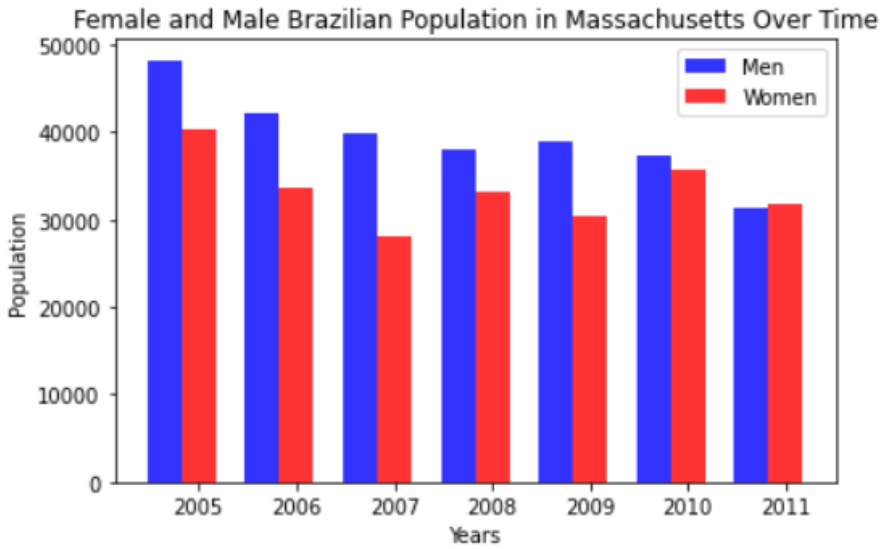




Throughout the years, the majority of the Brazilian population in Massachusetts was between the ages of 25 and 29, and there were very few people less than 10 and older than 50. Above are the

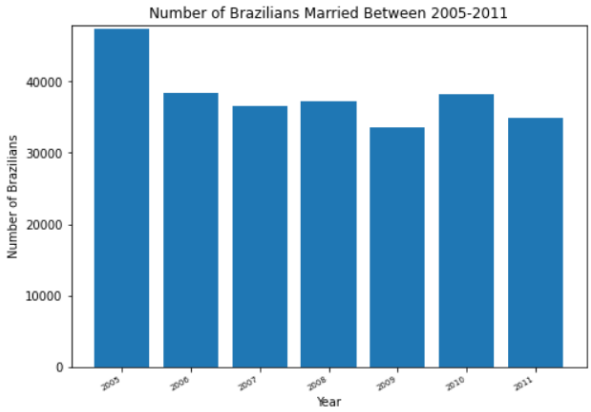
age distributions for the years 2005 and 2011. Graphs for other years are provided in our Jupyter Notebook.

Gender

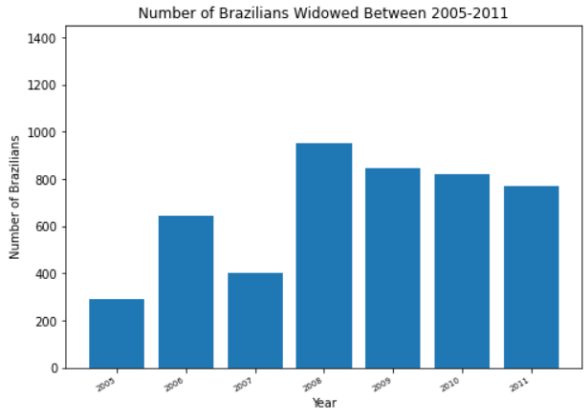


Although in 2005 there were more males than females, the gender distribution gradually leveled out to be 50% male and 50% female in 2011.

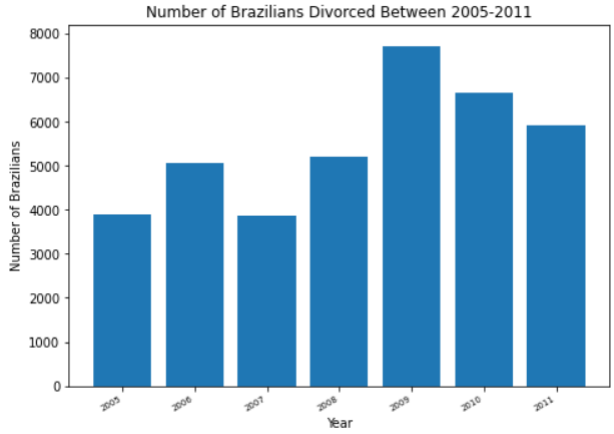
Marital Status



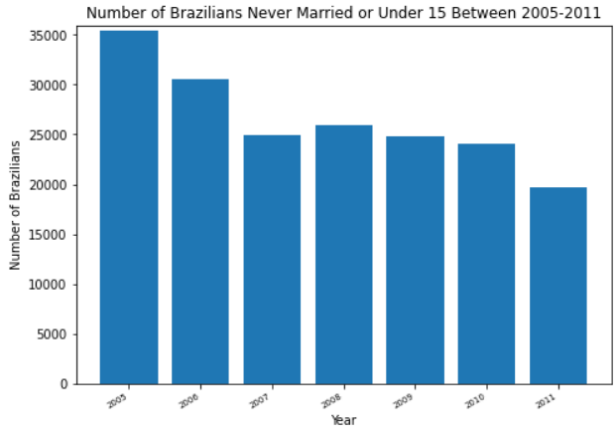
Between 2005-2011, the number of Brazilian immigrants married remained around 40,000.



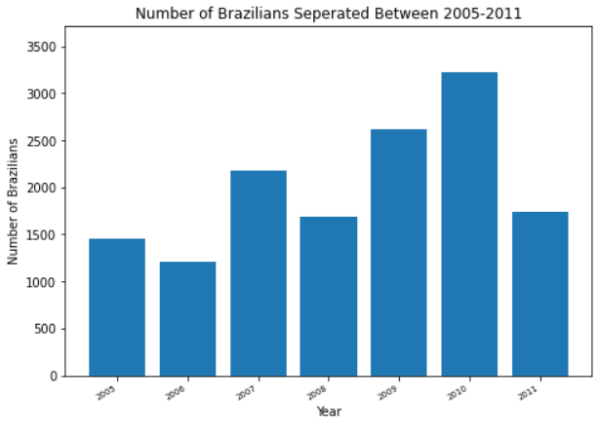
For years 2005-2007, the number of Brazilian immigrants widowed remained the same. However, there was a sharp increase in 2008, and the number remained about the same until 2011.



The number of Brazilian immigrants divorced remains the same between 2005-2008, but then has an increase in the year 2009.

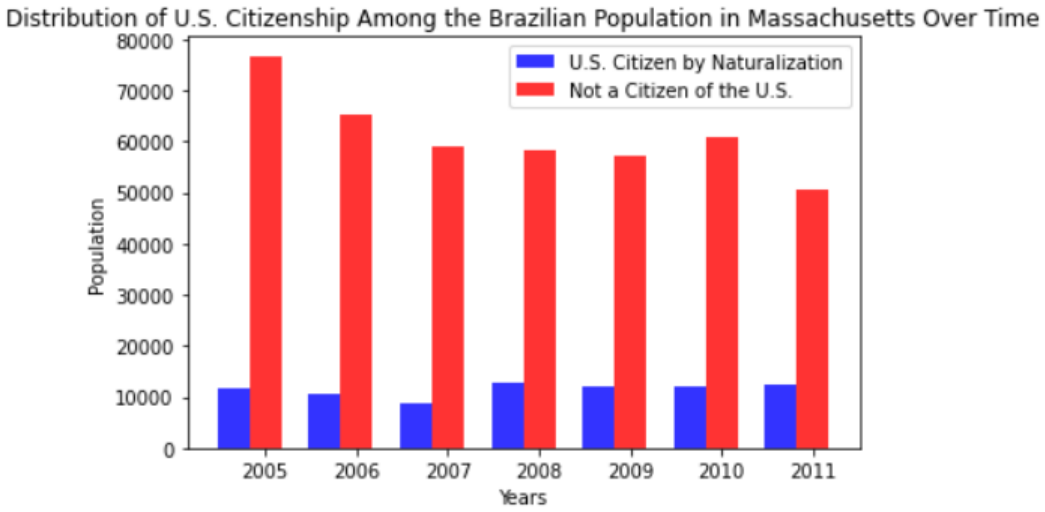


The number of Brazilians never married or under 15 decreased from 2005-2001, which could be a result of the overall population decreasing.



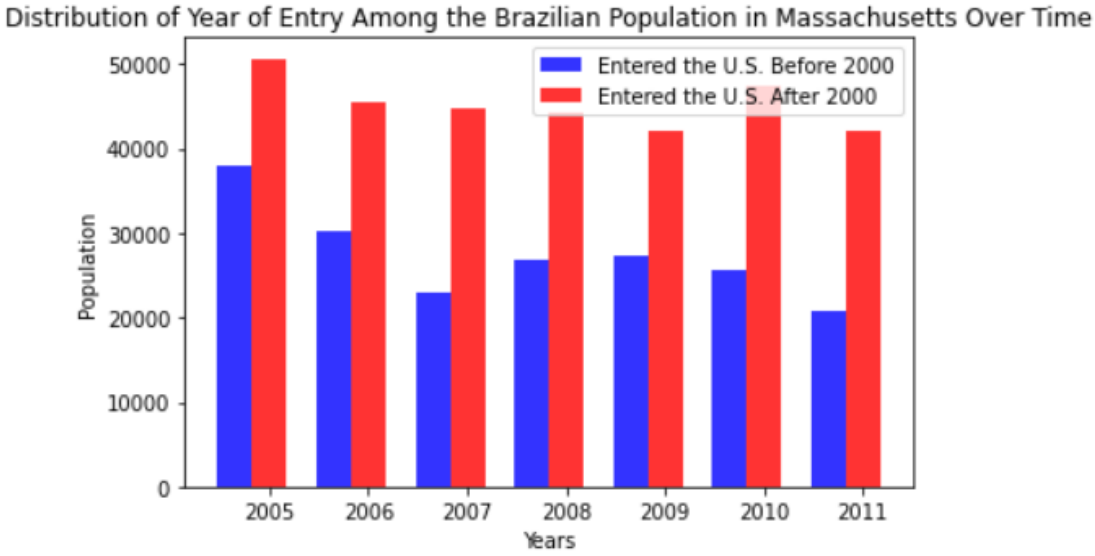
The number of Brazilians separated is a bit sporadic over the years with not much of a clear trend. There appears to be an increase from 2006-2010 and then a sharp decrease in 2011.

Citizenship



From 2005-2011, the number of Brazilians who are US citizens by naturalization remains around 10000, while the number of Brazilian immigrants that are not citizens gradually goes down over the years, which may be a result of the overall population decreasing.

Year of Entry

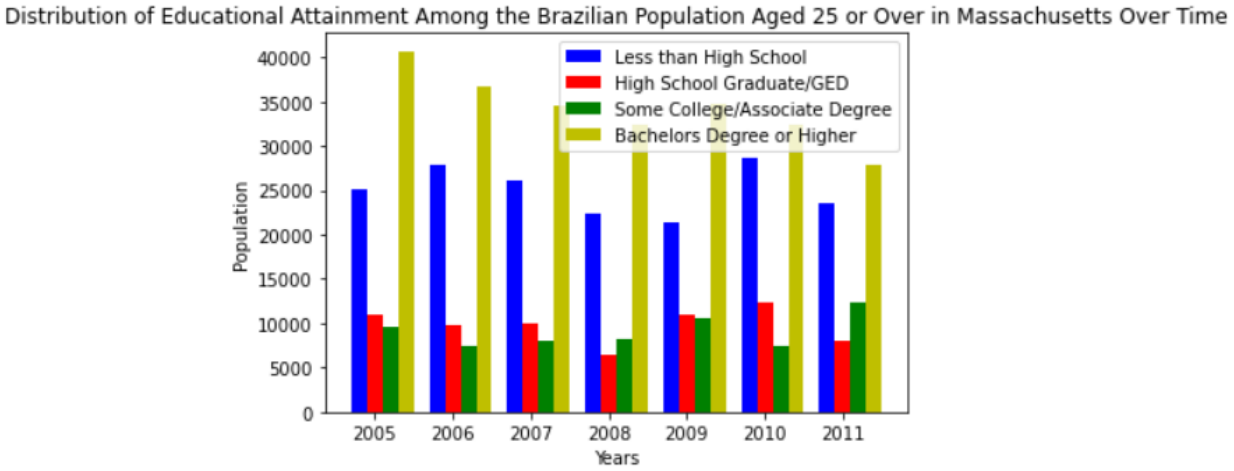


The number of Brazilian immigrants that entered before 2000 gradually decreased from 2005-2011, while the number of Brazilian immigrants that entered after 2000 remained around the same.

Year of Entry

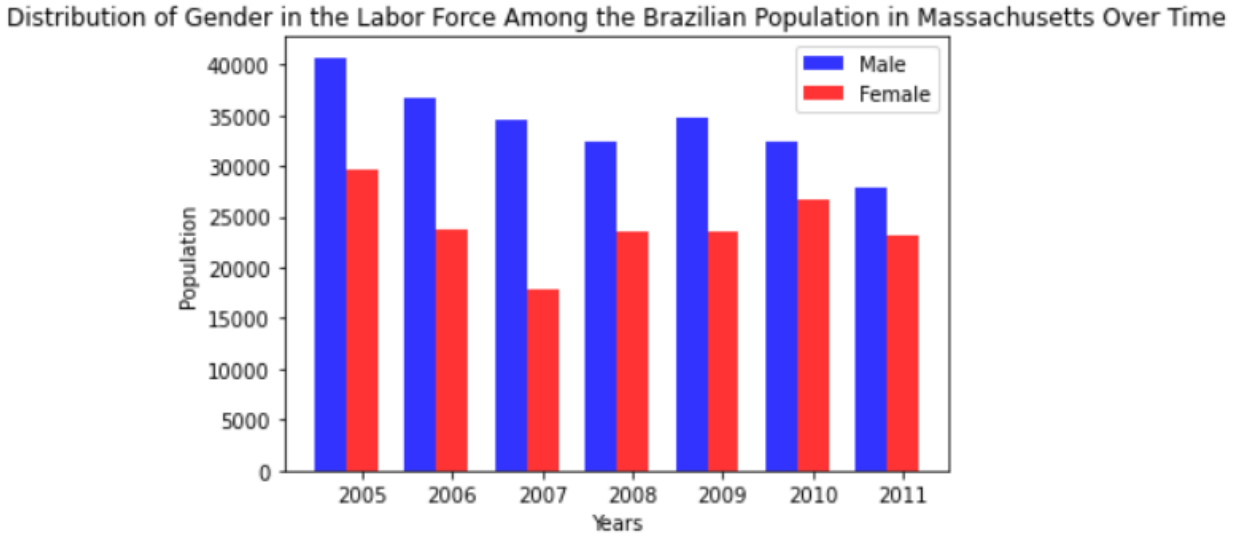
Between 2005-2011, the number of Brazilians that speak English less than very well decreased, while the number of Brazilians that speak English very well stayed around the same throughout.

Educational Attainment of Population Aged 25 or Over



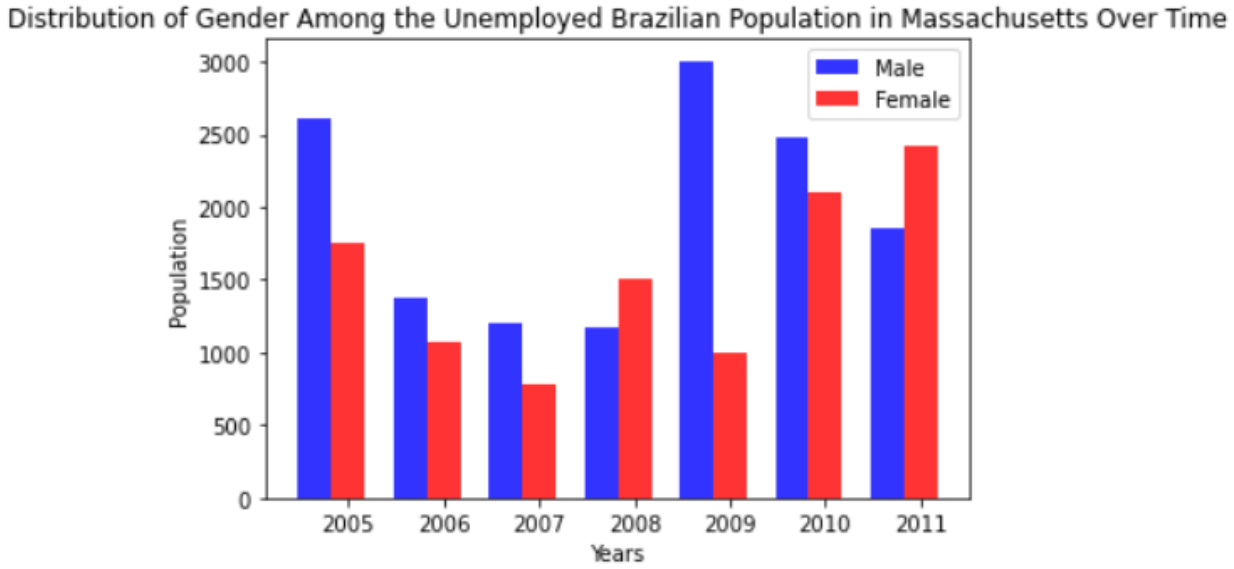
Between 2005-2011, the number of Brazilian immigrants with an education level of bachelor's degree or higher has decreased while the number of Brazilian immigrants with an education level of less than high school has stayed around the same throughout.

Gender Distribution of Labor Force



Throughout 2005-2011, the ratio of males to females in the labor force gradually became about 1:1.

Gender Distribution of Unemployment

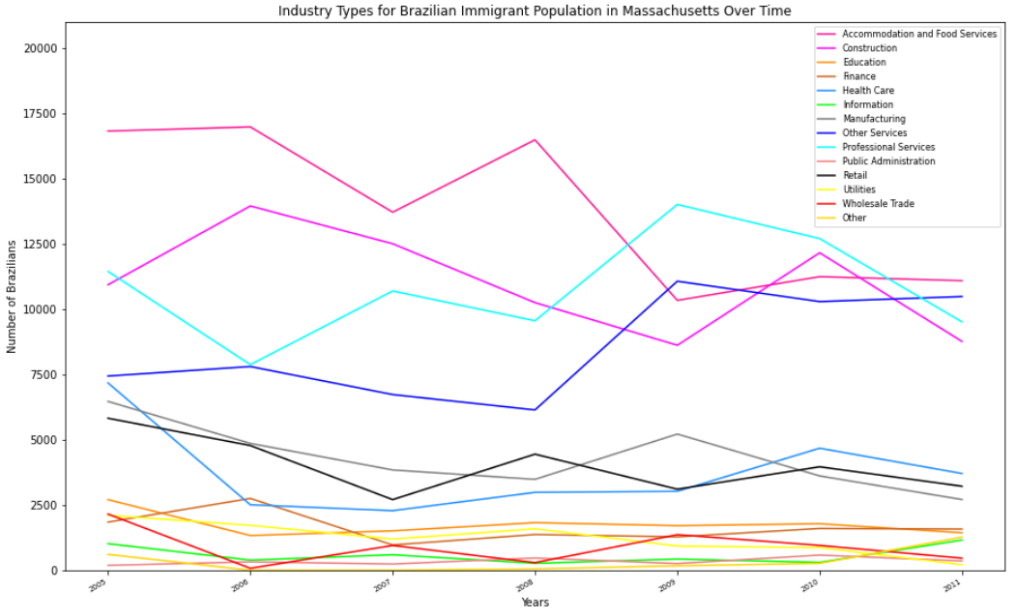


There was no specific trend for the gender distribution of unemployment. Years such as 2006 and 2008 have a near 1:1 ratio, while other years such as 2009 have a much different ratio. Overall, there was a trend of more males being unemployed than females.

Employment Type

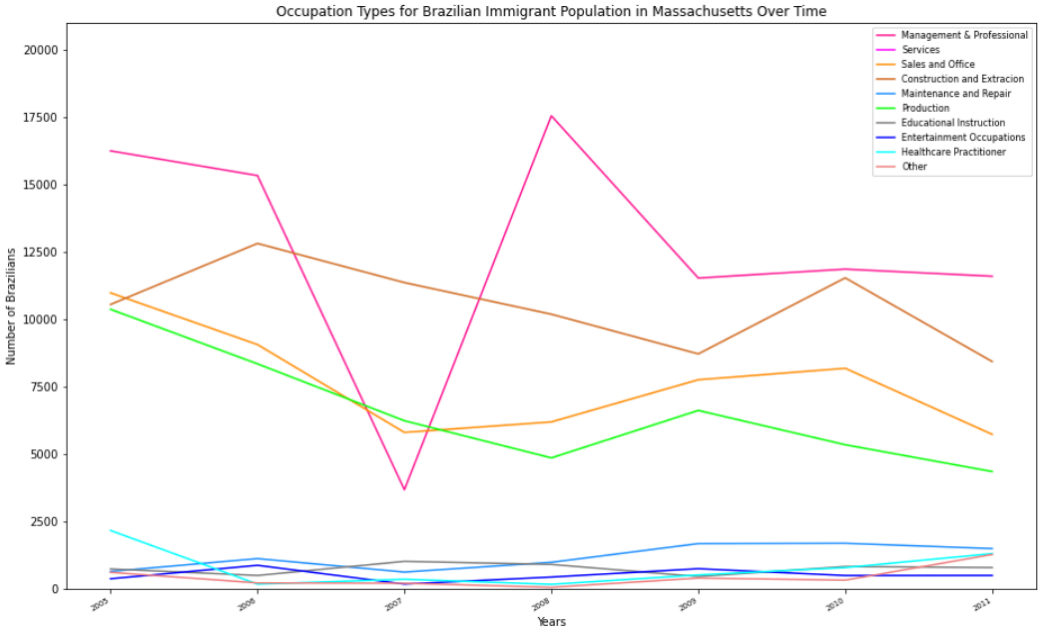
The most popular employment type remained Private Wage and Salary workers, even though the number of Brazilians in the field went down. Meanwhile, the number of Brazilians in the Self employed not incorporated field had a slight increase. For the rest of the employment types, the population levels remained about the same.

Industry Types



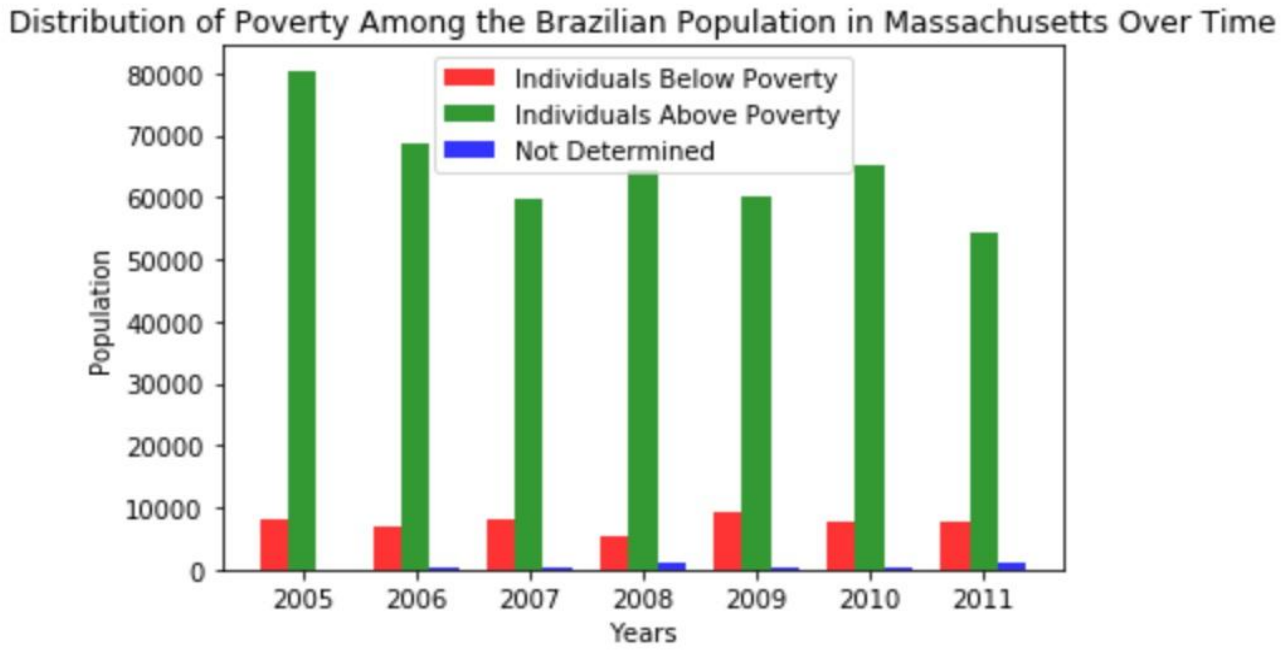
Overall, the industry types for the Brazilian Population in Massachusetts became confined to four main industries: Accommodation and Food Services / Arts, Entertainments, and Recreation; Construction; Professional, Scientific, Management, and Administrative Services, and Other services. Above, we have provided the graphs for 2005-2011. The rest of the graphs can be found in our Jupyter Notebook.

Occupation Types



Occupation types remained relatively similar throughout the years, with the most popular occupation type being Services, and the least popular occupation types being Education, Maintenance, and the Arts.

Poverty Distribution



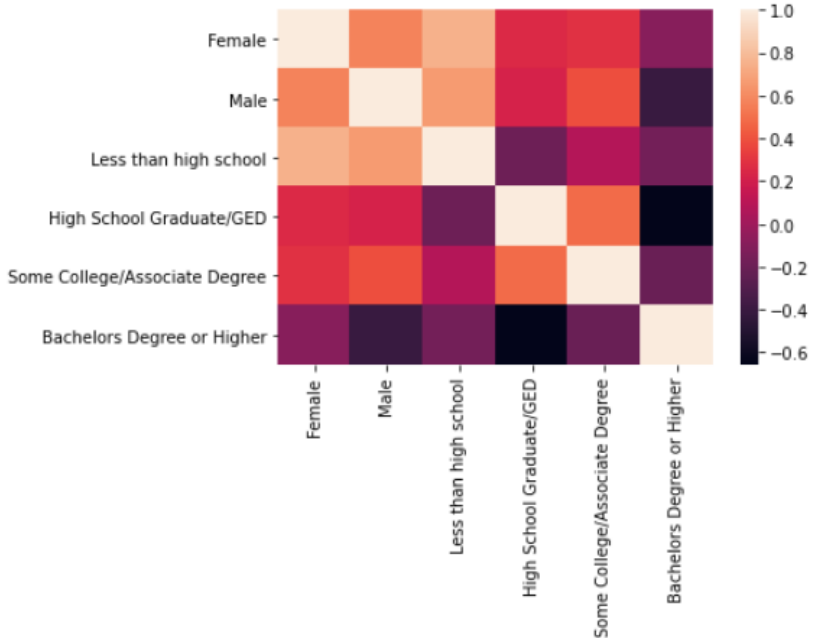
Overall, there was a drop in individuals above poverty from 2005-2011 but individuals below poverty and with undetermined poverty levels remained the same.

Median Personal Earnings Distribution

The Median Personal Earnings, including and excluding 0 and negative earnings, was fairly stagnant over the observed years. There were some peaks, for example in 2008 and 2011, but these seem insignificant specifically to the Brazilian population of Massachusetts.

Correlations

Gender and Education



For both males and females, there is a strong positive correlation between gender and having a less than high school education. There is also a strong negative correlation between gender and having a bachelor's degree or higher. Interestingly, there is a more positive correlation between gender and having some college education as opposed to the correlation between gender and having some highschool education.

Gender and Poverty

Between the two genders and poverty level, there is a stronger positive correlation between males and a below poverty level when compared to the correlation between females and a below poverty level. This is also the case for the positive correlation between males and an above poverty level as opposed to the correlation between females and an above poverty level.

Industry and Poverty

There is a strong positive correlation between Brazilian's in the retail industry and an above poverty level. There is also a strong positive correlation between Brazilian's in the Professional, Scientific, Management, and Administrative services industry and a below poverty level

Documentation

The code that we wrote can be used to retrieve the data on the Brazilian population for any state by only changing a few lines of codes. Anytime that we got information from the dataset "years," we would write something such as years[25][4]. The 25 in the example is referencing the State Code (see the State Codes tab in the Brazilian Immigrants.xlxs document) for Massachusetts, and if one wants to focus on another state then they will change that 25 anytime that we call the dataset "years" to the State Code for that specific state. Changing the State Code anytime we call the dataset years and then running all of the cells in order will result in visualizations for every feature above for the Brazilian population in that state over the years 2005-2011.

Since our codebase is a Jupyter Notebook, each cell is run individually. This makes it easy to go back and change code for a certain feature without having to run every line of code again. The only time this could raise a problem would be if one closes out of the Jupyter notebook and doesn't run the first few cells at the beginning in order to do the imports and instantiate the variables for the different years.

Our code should be relatively easy to navigate, as each feature has a header associated with it and variables have names associated with their purpose.