Code

Refugee Resettlements in the USA

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GitHub (https://github.com/tlzhu19/edav-final-project-41) | Website (http://rpubs.com/tlzhu/refugees_in_us)

1 Introduction

1.1 Motivation

The world's forcibly displaced population hit its record high in 2017. Globally, at the end of 2017, the global refugee population increased by 2.9 million. By the end of the year, 68.5 million individuals were forcibly displaced worldwide as a result of persecution conflict, or generalized violence (https://www.unhcr.org/5b27be547.pdf (https://www.unhcr.org/5b27be547.pdf)). Despite the increase in demand for refugee admission and assistance, the United States specifically has taken a drastic turn away from supporting refugees. The number of refugees admitted to the United States has dropped from a recent high of 84,994 in FY 2016 to 22,874 in FY 2018 - the lowest in 40 years since 1977. The current ceiling for refugee admission has also dropped to 45,000, the lowest in the history of the current U.S. resettlement program. Coming at a time when global numbers of refugees have reached record highs, the ratio of refugees admitted to the United States to the number of refugees worldwide has never been lower. For the first time, the U.S. policy towards refugee admission is moving decisively against the trend of the total number of refugees worldwide (https://www.cgdev.org/blog/reflecting-world-refugee-day-trends-and-consequences-us-refugee-policy (https://www.cgdev.org/blog/reflecting-world-refugee-day-trends-and-consequences-us-refugee-policy)).

The recent years thus mark a significant shift in refugee resettlement in the U.S., as a result, this report will be examining the refugee admission trend in the U.S. over the past 10 years (2009-2018).

1.2 Background

According to the UNHCR, refugees are defined as those who have been forced to leave their country due to violence, war, or persecution based on their race, religion, nationality, political opinion or particular social group.

Process of refugee resettlement (https://www.unrefugees.org/refugee-facts/usa/ (https://www.unrefugees.org/refugee-facts/usa/)):

1. The process of refugee resettlement to the U.S. is a lengthy and thorough process that takes approximately two years and involves numerous U.S. governmental agencies.
2. Refugees do not choose the country in which they would like to live. UNHCR, the UN Refugee Agency, identifies the most vulnerable refugees for resettlement and then makes recommendations to select countries.
3. Once a refugee is recommended to the U.S. for settlement, the U.S. government conducts a thorough vetting of each applicant. The process of which takes between 12 to 24 months and includes:
    - Screening by 8 federal agencies including the State Department, Department of Homeland Security and the FBI
    - Six security database checks and biometric security checks screened against U.S. federal databases
    - Medical screening
    - Three in-person interviews with Department of Homeland Security Officers

Under the Refugee Act of 1980, the president sets an annual ceiling for refugee admissions in consultation with Congress. The annual ceiling has varied over the years, from a high of 231,700 in FY 1980 to a prior low of 67,000 in FY 1986. Amid a large exodus of Syrinas from their war-torn country, President Obama raised the refugee ceiling for FY 2016 to 110,000. After taking office, Trump reduced the FY 2017 cap to 50,000, and for FY 2018 set one at a historic low of 45,000. Far fewer refugees, 22,874, were actually resettled in FY 2018.

1.3 Questions

There are currently 25.9 million refugees in the world, indicating the dramatic growth in refugees over the past decade. This led us to question what the refugee resettlement trend has been for the past decade, and delve deeper than just the changes in the numbers of refugees. In order to better visualize the trend of refugee resettlement to the U.S., this report will be specifically focusing on the top 5 countries with the highest refugee resettlement population in the U.S. (Burma, Iraq, Somalia, Bhutan, Democratic Republic of the Congo), which accounted for 60.9% of the total refugee arrivals in the U.S. (https://data.newamericaneconomy.org/en/refugee-resettlement-us/ (https://data.newamericaneconomy.org/en/refugee-resettlement-us/)).

We are interested in answering the following questions to gain a better understanding of the refugee resettlements in the United States:

1. What insights can we gain from temporal exploratory data analysis of refugee settlement patterns in the U.S. from 2009 to 2018?

    - Has there been increases/decreases in refugee resettlements population in the 10 years?
    - Is there a correlation between change in refugee resettlement population and major political events that have happened over the 10 years?
2. What insights can we gain from geographical visualization of refugee settlement patterns in the U.S. over the 10 years? Why might some states have larger refugee settlements than others?
3. What changes in demographic patterns (i.e., religion, gender, age, etc.) within the refugee population over the 10 years can we visualize?
    - Given the number of religions included in the refugee population, we will be focusing on the top 4 religions in the world (Christianity, Islam, Hinduism, Buddhism). In Iraq, they separate the Muslim population into three categories: Muslim, Muslim Shiite, and Muslim Suni. For the purposes of this analysis, we will combine them as one (https://thecountriesof.com/top-5-largest-religions-in-the-world/ (https://thecountriesof.com/top-5-largest-religions-in-the-world/)).

2 Data Sources

2.1 Refugee Processing Center Data

We first collected data from the RPC (Refugee Processing Center), which is operated by the U.S. Department of State, Bureau of Population, Refugees, and Migration (PRM). It coordinates the processing and tracking of the movement of refugees from various countries around the world to the U.S. for resettlement under the U.S. Refugee Admissions Program. It provides refugee arrival information:

1. by state and nationality
2. by demographic profile
3. by destination and nationality
4. by nationality and religion.

We focused on 1) and 2). Note that the data in 3) was included in 2).

2.1.1 Total Refugee Resettlements by State

We initially wanted to download the number of refugee resettlements in each state in the U.S. per year. Since the RPC website does not allow faceting by year, we had an excel sheet for each year. The original total arrivals file for each year showed the table containing information on the State, Cases, and the number of individuals that arrived in each state. For this data, there were 50-56 records per year (from 2009 to 2018). Each record represented a state or U.S. territory, the extra six records were from American Samoa, District of Columbia, Guam, Puerto Rico, Unknown State, and Virgin Islands. For the purposes of our analysis, we wanted to focus on the States rather than other U.S. territories. Since we wanted a single dataframe for all of these data while excluding the non-state U.S. territories in the State column, we had to combine and clean the original data where more detailed steps are provided in Section 3: Data Transformation.

2.1.2 Demographic Information of Resettled Refugees

For the same reasons stated above, we had an excel sheet detailing the refugee demographics information for the top-5 countries (Bhutan, Burma, DRC, Iraq, and Somalia) for each year. These countries had the most number of refugees resettling in the U.S. The individual original demographics file for each year contained five sheets: Age Group, Religion, Ethnicity, Education, and Native Language. The Age Group sheet contained the age groups, gender, cumulative total, and percentage of individuals belonging to that specific group. The Religion sheet contains records of the number and percentage of individuals belonging to a certain religion. Similarly, Ethnicity, Education, and Native Language sheets all contained information regarding the total number of individuals. Other than Age Group and Education, the other three sheets (Ethnicity, Native Language, and Religion) all varied among countries and years, thus we also had to further clean and combine the original dataset.

2.2 Refugee Ceiling Data

We obtained 10 data points, representing the annual ceilings in the past decade, which were set by the U.S. president since the resettlement program was enacted with the Refugee Act of 1980. We sourced the data from the State Department Bureau of Population Refugees website.

3 Data Transformation

3.1 Cleaning the Data in R

We took the following steps to clean our raw data:

1. From the website, we were able to download '.xlsx' files. Raw files can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw).
    - As we had separate files for the overall refugee resettlement data for each year from 2009 to 2018, we had to combine these files into one and add in the year from which the data was obtained from.
    - We also had separate files for the demographics, each excel sheet corresponds with one country, in one year. Within each file, each sheet corresponds to one specific demographics information (e.g. Religion, Education, Native Language etc.).
2. Wrote two functions to clean Excel sheet for a given year so that they are in a format that is easily readable by R.
    - `clean_arrival` to clean the Excel files for all refugee resettlements for each state.
        - removed extra rows and moved columns such that there are no repeated columns and those columns that share a name are combined into one
    - `clean_demographics` to clean the Excel files for demographic information for refugees from specific countries (namely Bhutan, Burma, DRC, Iraq, and Somalia).
        - removed extra rows and moved columns such that there are no repeated columns and those columns that share a name are combined into one.

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3. Wrote another function, `combine_files` , to combine each year's Excel file into one.
    - For those files that contained overall refugee resettlement data, we generated a function that combined these files as they had common column names.
    - For those files that contained demographics data, we generated a function that combined the sheets within each file that belonged to the same kind of demographics information. The way these sheets are named is consistant within each file, we simply referred to the sheet name when combining those within the same country and year.
    - We also added in an extra column - `Year` , and parsed the information about which year the data is from from the file name (in the format: Arrivals_*year*).

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4. Saved these as csv files and uploaded to GitHub to easily access.
    - We now have only 1 file for the overall refugee resettlement population data that consisted of the total refugee resettlement population by state.
    - In terms of demographics information, or refugee resettlement information by country of origin, we have 1 file for each demographics category (thus 5 in total).

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3.2 Cleaned Data Format

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After cleaning the data, we have six '.csv' files that can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/clean). The following tables are a preview of the first few rows of these csv files.

1. `all_arrivals.csv` : The total number of refugee resettlements to each of the 50 states in the U.S. from 2009-2018. All raw files for this file can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/all_arrivals).

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State	Cases	Inds	Year
California	5524	11512	2009
Texas	3638	8826	2009
New York	2013	5003	2009
Arizona	1952	4543	2009
Florida	1834	4196	2009
Michigan	1602	3460	2009

2. `age_group.csv` : The composition of refugee population based on age groups from under 14 years old to age 65 and over. Provides additional information on which gender, country,

and year these individuals in age groups belong. All raw files for this can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/demographics).

Code

Age.Group	Male	Female	Total	country	Year
Under 14	1559	1627	3186	Bhutan	2009
Age 14 to 20	1258	1310	2568	Bhutan	2009
Age 21 to 30	1823	1927	3750	Bhutan	2009
Age 31 to 40	1110	1124	2234	Bhutan	2009
Age 41 to 50	726	737	1463	Bhutan	2009
Age 51 to 64	583	626	1209	Bhutan	2009

3. `education.csv` : The composition of refugee population based on the education levels of the refugees. Provides additional information on which gender, country, and year these individuals in age groups belong. All raw files for this can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/demographics).

Code

Education	Male	Female	Total	country	Year
Bio Data not Complete	2657	1846	4503	Bhutan	2009
Graduate School	21	144	165	Bhutan	2009
Intermediate	509	496	1005	Bhutan	2009
Kindergarten	123	127	250	Bhutan	2009
NONE	100	42	142	Bhutan	2009
Pre-University	1	1	2	Bhutan	2009

4. `ethnicity.csv` : The composition of refugee population based on the ethnicity of the refugees. Provides additional information on which gender, country, and year these individuals in age groups belong. All raw files for this can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/demographics).

Code

Ethnicity	Male	Female	Total	country	Year
Lhotsampa	7373	7677	15050	Bhutan	2009
Other	12	15	27	Bhutan	2009
Lhotsampa	5842	5881	11723	Bhutan	2010
Other	3	3	6	Bhutan	2010

Ethnicity	Male	Female	Total	country	Year
Lhotsampa	7314	7410	14724	Bhutan	2011
Other	4	7	11	Bhutan	2011

5. `native_language.csv` : The composition of refugee population based on the native languages used by the refugees. Provides additional information on which gender, country, and year these individuals in age groups belong. All raw files for this can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/demographics).

Code

Native.Language	Male	Female	Total	country	Year
Bio Data not Complete	3	4	7	Bhutan	2009
Dzongka	0	1	1	Bhutan	2009
English	2	1	3	Bhutan	2009
Hindi	1	0	1	Bhutan	2009
Marathi	1	0	1	Bhutan	2009
Napoletano-Calabrese	0	1	1	Bhutan	2009

6. `religion.csv` : The composition of refugee population based on the religion of the refugees. Provides additional information on which gender, country, and year these individuals in age groups belong. All raw files for this can be found here (https://github.com/tlzhu19/edav-final-project-41/tree/master/data/raw/demographics).

Code

Religion	Male	Female	Total	country	Year
Buddhist	748	853	1601	Bhutan	2009
Christian	534	518	1052	Bhutan	2009
Hindu	5798	5993	11791	Bhutan	2009
Kirat	305	328	633	Bhutan	2009
Buddhist	925	910	1835	Bhutan	2010
Christian	468	453	921	Bhutan	2010

Based on some initial analysis, we decided to exclude Ethnicity and Native language as they did not provide sufficient information to help us answer our questions regarding refugee resettlement trends in the U.S.. More specifically, Ethnicity and Native Language ware excluded in our data visualization as they are directly related to country of origin and thus are considered as redundant information.

Furthermore, we excluded many minority religions, as it made it difficult to observe the overall trend due to only a small number of people belonging to each religion. Hence, we concluded that since the majority of the refugees belong to the top-4 religions (Christian, Muslim, Hindu, Buddhist), we decided to focus on these religions.

3.3 Transforming the Data

In order to visualize and compare the refugee resettlement trends among countries or between years, we had to group the data by country, year, or both.

For the same reason, in addition to using the raw values given in the data (number of people belonging to that group), we transformed the data into proportion to see a clear comparison among the countries, religions, education level, and age.

4 Missing Values

The datasets from RPC (Refugee Processing Center) did not contain any missing values. However, we also noticed that our data contained a single row called “Unknown State”. Since this could not be visualized in our maps, we decided that it would be better to remove the data. Additionally, when we converted the `State` column to factors, there were 56. The extra six “states” are:

- American Samoa
- District of Columbia
- Guam
- Puerto Rico
- Unknown State
- Virgin Islands

Notice that these are territories of the U.S. as well as the capital of the U.S. We removed these rows since our main goal is to just focus on the fifty states.

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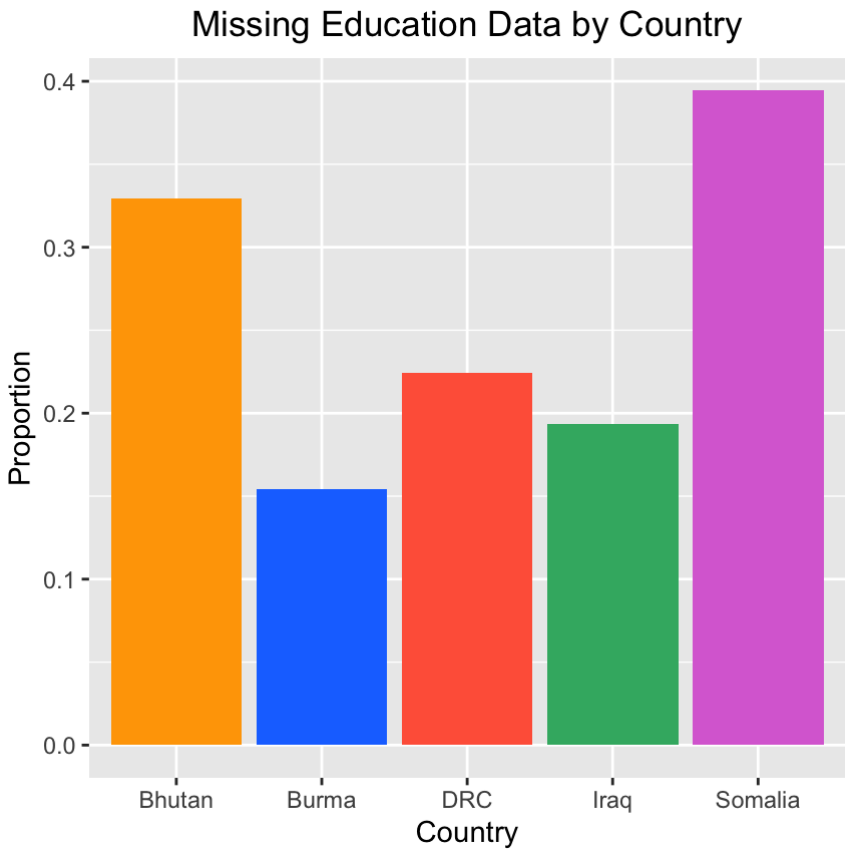
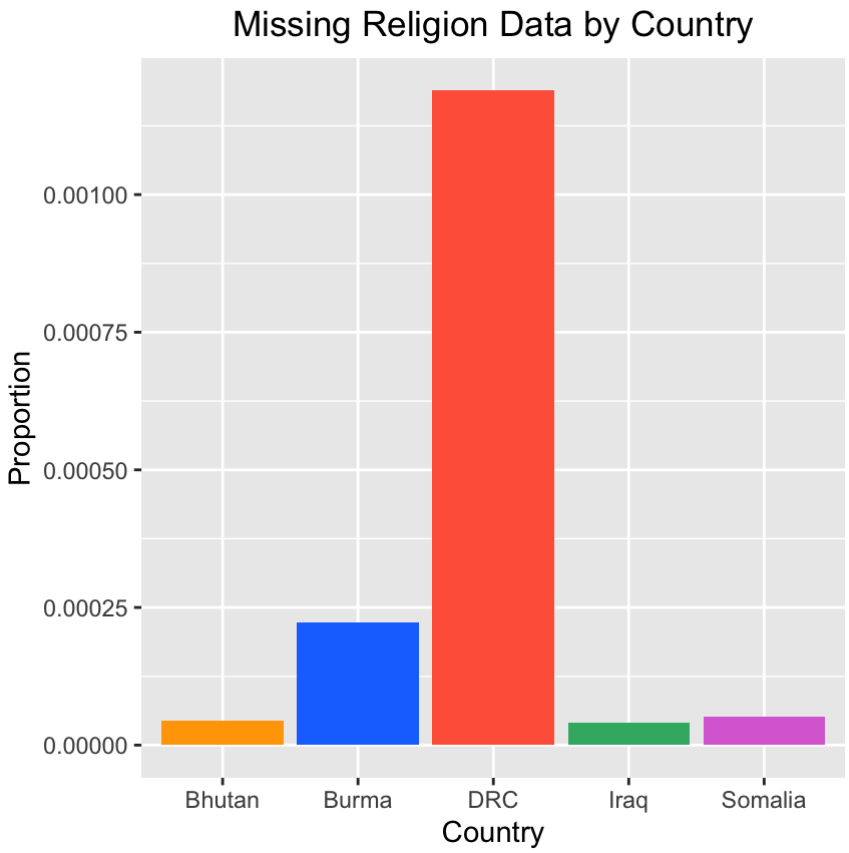


In Education data, there were two rows called “Bio Data not Complete” and “Unkown”. We decided to consider these two values as missing data since they do not provide information regarding the education level of the refugees that re-settled in the U.S.. By summing up the total amount of these two rows and dividing it by the total population of that specific country, we observed the proportion of missing data in each country.

In the Missing Education Data by Country, Somalia has the largest proportion of data missing among the top-5 countries, with approximately 0.39 of the data missing. Burma has the lowest proportion of data missing, with approximately 0.15 of the data missing.

Code



Similarly, for the Religion data, we also considered the row "Unknown" to be missing data, and calculated the proportion of missing data within each religion. Unlike the data on Education Level, the proportion of missing data was much smaller for religion. This suggests that information on religion was much more accessible compared to information on Education Level. DRC has the most amount of Religion data missing, with approximately 1.19e-03 of the total data missing.

Lastly, Age data did not contain any missing data, so no further analysis was needed to analyze missing patterns for this dataset.

5 Results

5.1 Temporal Analysis

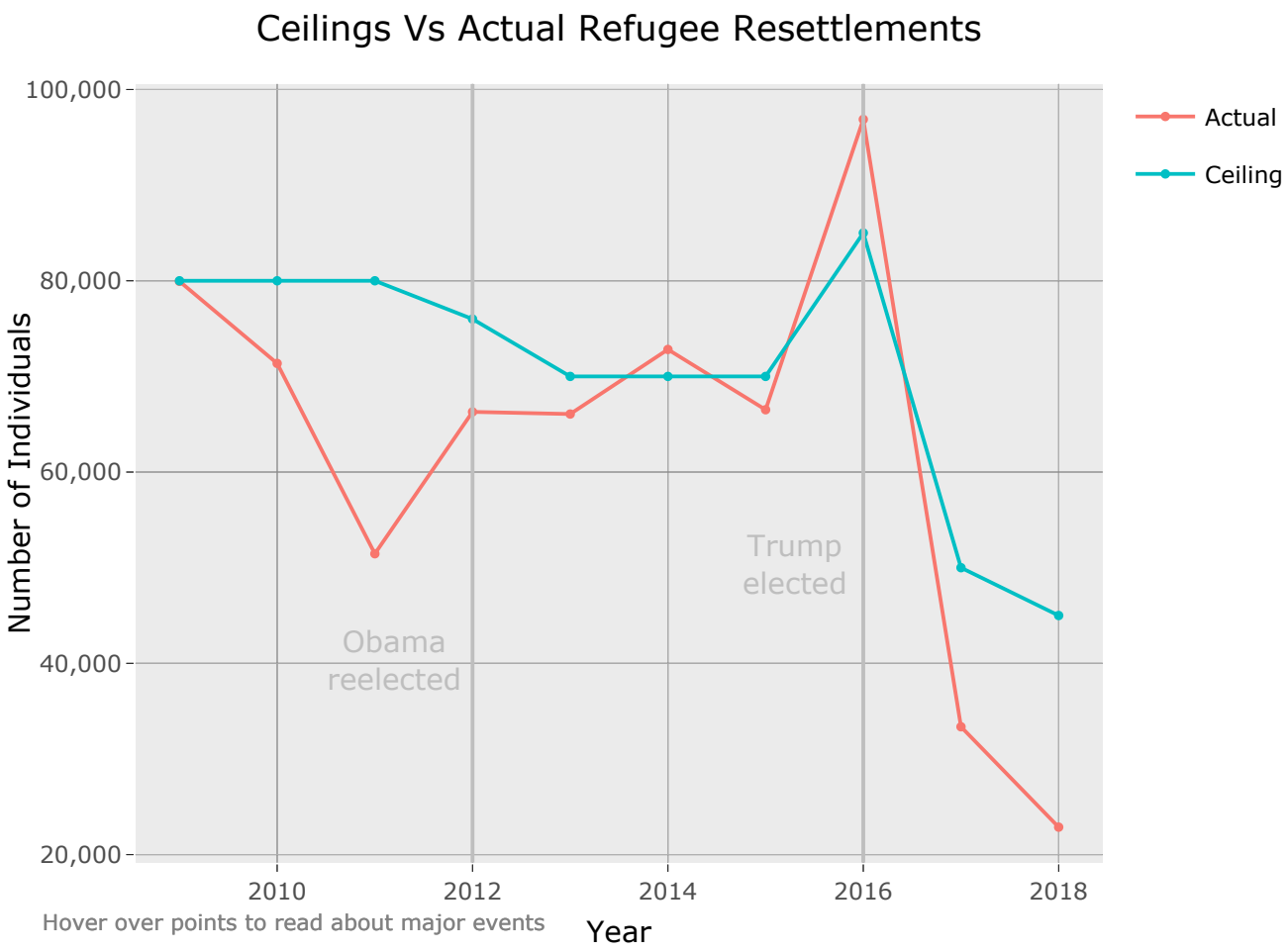
Given our datasets, it is apparent that the temporal patterns of our data are of great importance to our analysis. As a result, to provide a general view of the overall change in resettlement population from 2009 to 2018, we chose to use a time series graph.

In this graph, we have years as the independent variable, and population count as the dependent variable. The green line indicates the ceiling set by the U.S. government for the maximum number of refugees that can be admitted. The red line indicates the actual number of individuals admitted.

We hypothesize that the change in the refugee admission ceiling, and the actual refugee resettlement population are correlated with:

1. The government administration at the time
2. The U.S. economy and major events in general

Code



Looking at the general trend of change in refugee admission ceiling, the two timepoints that stand out the most are 2015 and 2016.

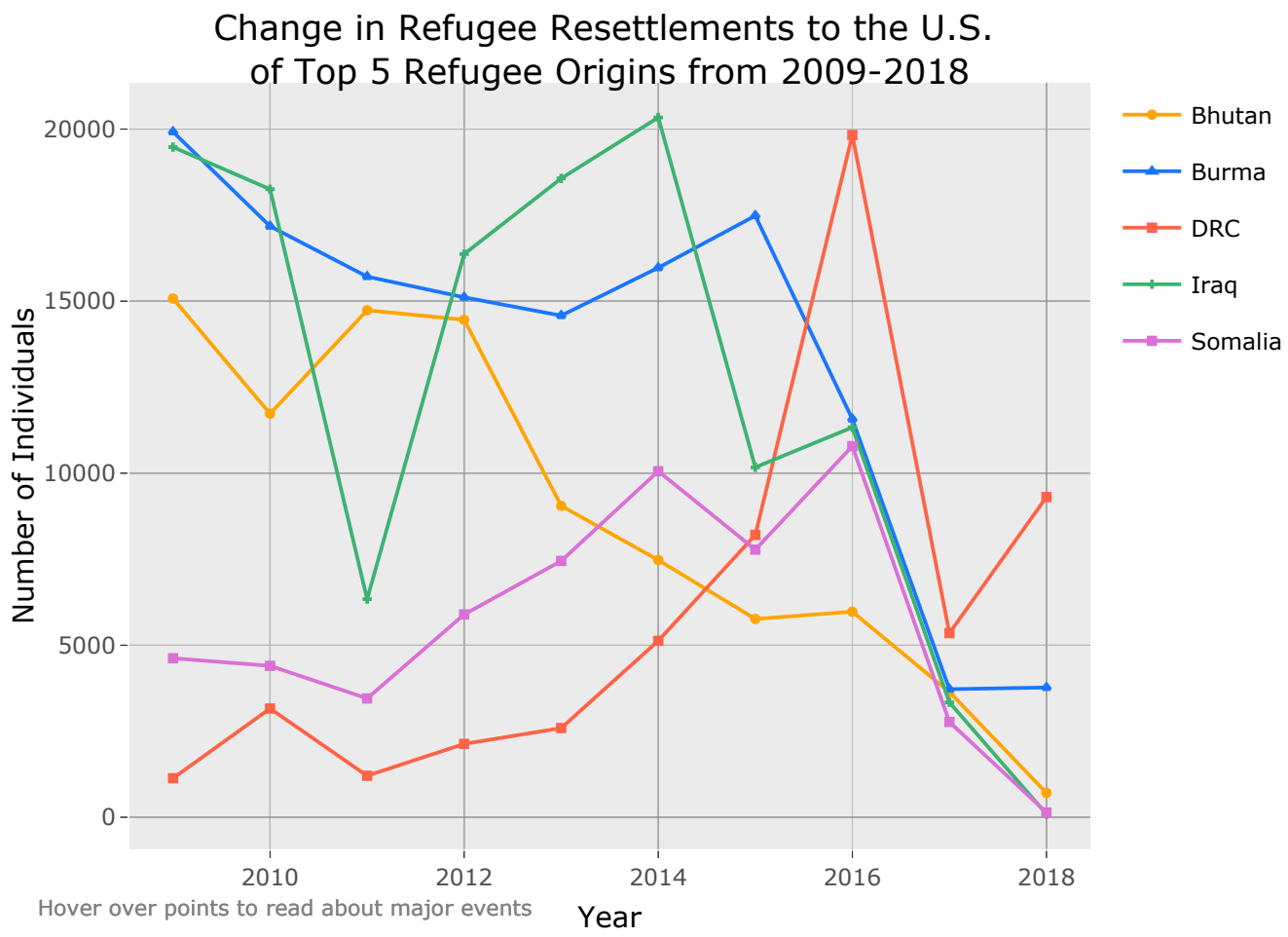
- In 2015, the refugee admission ceiling increased drastically from 70,000 to a record high of 85,000 in 2016 under President Obama's administration.
- In 2016, however, the refugee admission ceiling decreased drastically from 85,000 to a record low of 45,000 in 2018 under President Trump's administration and has continued to decrease.

Looking at the general trend of change in the actual refugee resettlement population, we can see that the population decreased from 79,943 in 2009 to a low of 51,458 in 2011, when President Obama was re-elected. However, the resettlement population increased from 51,458 in 2011 to a record high of 96,874 in 2016, and decreased drastically from 96,874 in 2016 to a record low of 22,847 in 2018 under President Trump's administration.

In order to take a closer look at the refugee resettlement pattern of each individual country, we decided to visualize each of our five countries individually(https://data.newamericaneconomy.org/en/refugee-resettlement-us/(https://data.newamericaneconomy.org/en/refugee-resettlement-us/)).

We hypothesize this trend to be both correlated to the U.S. refugee admission policy, the U.S. economy overall, and major political and social events in each of the 5 countries.

Code



Overall, the amount of refugees that resettled to the U.S. decreased drastically from 2009 to 2018.

Bhutan:

Situated between the superpowers of India and China, the isolated Buddhist kingdom of Bhutan has generated one of the highest numbers of refugees in the world in proportion to its population. From 1991, over one sixth of Bhutan's people sought asylum in Nepal, India and other countries around the world. Over 105,000 Bhutanese have spent 15-20 years living in UNHCR-run refugee camps in Nepal. Since 2008, a resettlement process has seen the majority of those living in the camps re-settled in the USA, Canada, Australia, New Zealand and Europe (http://bhutaneserefugees.com/ (http://bhutaneserefugees.com/)). Overall, there is a decrease in the number of Bhutan refugees that resettled to the U.S. over the 10 years, from 15,000 in 2009 to 707 in 2018.

Burma:

The Rohingya people of Burma have faced decades of systematic discrimination, statelessness and targeted violence. Such persecution have forced Rohingya people out of the country for many years, with significant spikes following violent attacks in 1978, 1991-1992, and again in 2016. It was August 2017 that triggered by far the largest and fastest refugee outflux in Burma

(https://www.unocha.org/rohingya-refugee-crisis (https://www.unocha.org/rohingya-refugee-crisis)). There is an overall decrease in the number of Burma refugees that resettled to the U.S. However, we can see that it first decreased from 2009 to 2013, and then increased from 2013 to 2015, when hundreds of Muslim Rohingyas migrants leave by sea in flimsy boats. However, this population drastically fell after 2015 to a record low of 3,771 in 2018 despite the rise in overall Rohingya refugees in 2017. We can thus infer this as a reflection of the tightening of U.S. refugee admission policy.

Democratic Republic of the Congo (D.R.C):

Despite the DRC's civil war being brought to an end in 2013, the nation has continued to see sporadic waves of fighting - especially in the Eastern parts of the country. Since 2016, a new wave of violence also affected the DTC's previously peaceful Kasai region, bringing thousands of civilians to struggle for survival (https://www.unhcr.org/en-us/dr-congo-emergency.html (https://www.unhcr.org/en-us/dr-congo-emergency.html)). In addition to widespread violence from armed groups, many displaced people are facing major health risks, including a recent outbreak of Ebola. The eastern provinces of Ituri and North Kivu, which are most affected by the outbreak are also the areas most affected by displacement and violence (https://www.unrefugees.org/news/democratic-republic-of-the-congo-refugee-crisis-explained/#What%20conflicts%20are%20occurring%20within%20the%20DRC (https://www.unrefugees.org/news/democratic-republic-of-the-congo-refugee-crisis-explained/#What%20conflicts%20are%20occurring%20within%20the%20DRC)?). The refugee resettlement trend from the DRC to the U.S. is the reverse of the overall refugee resettlement trend among the 5 countries and experienced an overall increase. It increased drastically from 1,134 in 2009 to 19,829 in 2016, but dropped drastically to 5,252 in 2017. However, there is still an overall increase of 8,171 over the 10 years.

Iraq:

As a victim to decades of conflict and widespread violence, Iraq has more than 3.3 million Iriqis displaced across the country since 2014. Although armed violence has declined in some parts of the country, armed groups and small scale military operations continued to carry out unpredictable attacks throughout the country, resulting in new displacements (https://www.unrefugees.org/emergencies/iraq/ (https://www.unrefugees.org/emergencies/iraq/)). Iraq's overall refugee resettlement trend in the U.S. is probably the one most related to U.S. policy. As we can see from the graph, the refugee resettlement population from Iraq first dropped in 2011, when the war between the U.S. combat operations in Iraq officially ended, to a record low of 6,339. However, the refugee resettlement population peaked again in 2014 at 20,337 when the Iraqi Civil War began and ISIS militants controlled Iraqi cities. This number, however, fell from 20,337 in 2014 to a low of 91 in 2017.

Somalia:

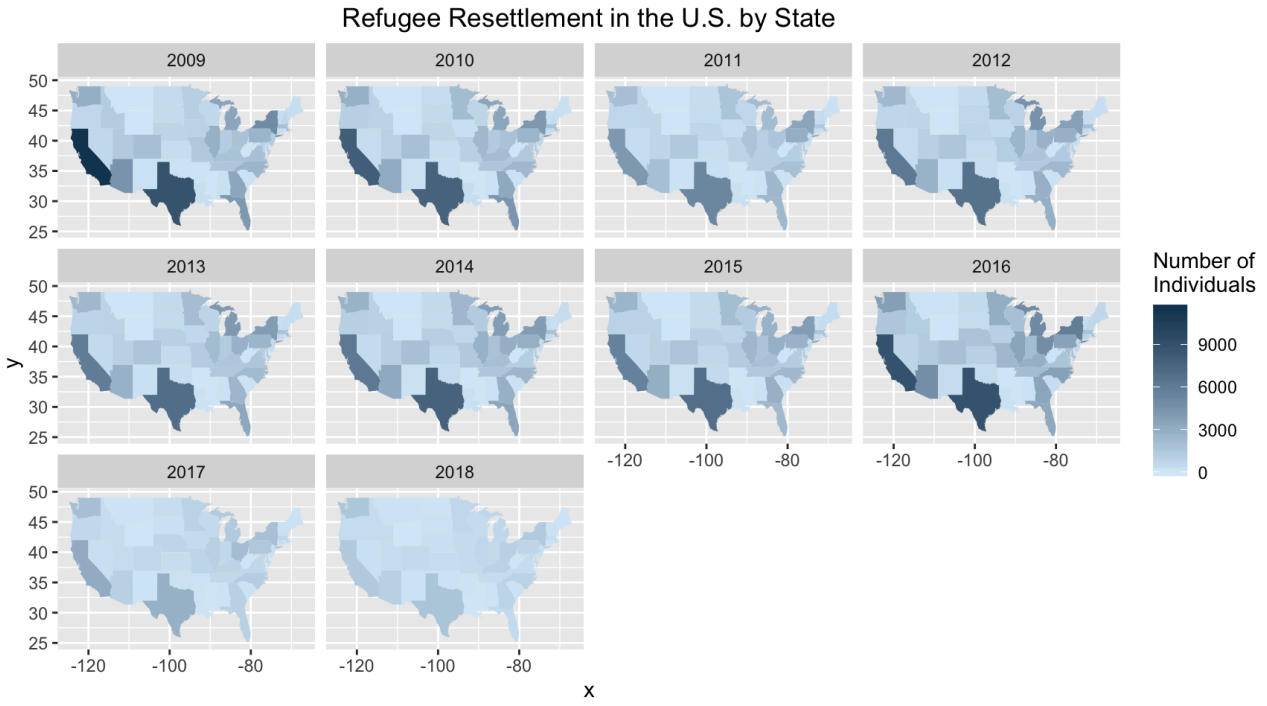
The impact of nearly two-and-a-half decades of armed conflict in Somalia, compounded by drought and other natural hazards, drove over 870,000 Somalis to flee their homes (https://www.unhcr.org/en-us/somalia.html (https://www.unhcr.org/en-us/somalia.html)). We

can see from our graph that the population of Somalian refugees in the U.S. first increased from 4,620 in 2009 to 10,786 in 2016. Unsurprisingly, however, this population dropped to 139 in 2017.

5.2 Geographical Analysis

In order to visualize the overall refugee resettlement trend within the United States, we chose to use a choropleth map. We hypothesize that: 1. There would be an overall decrease in refugee resettlement population in the U.S. in all states 2. Coastal states would have more refugees than other states.

Code



We can see that there is a slight decrease in the overall refugee resettlement population in 2011 and increased slightly from 2012 to 2016. However, this population decreased drastically in all states after 2016.

Confirming our hypothesis, we can also see that in all 10 years, the number of refugees in coastal states like California was significantly higher than other states. Together, states like Texas, California, Washington and New York resettled roughly a quarter of all refugees.

In order to further examine the refugee resettlement pattern within the U.S. states, we will be providing an interactive visualization in a later part of this report.

5.3 Demographic Analysis

5.3.1 Religion

The U.S. has admitted far more Christian refugees than Muslim refugees in recent years. Christians accounted for nearly 80% of refugees who came to the U.S. by the end of 2018. This pattern marks a sharp reversal from several years ago. In fiscal 2016, the number of Muslim

refugees admitted reached 38,900, a historic high that outpaced Christian refugee admissions, accounting for 46% of the total number of refugees that resettled to the U.S. that year (https://www.pewresearch.org/fact-tank/2019/10/07/key-facts-about-refugees-to-the-u-s/ (https://www.pewresearch.org/fact-tank/2019/10/07/key-facts-about-refugees-to-the-u-s/)).

We hypothesize that under President Trump's administration, the population of Muslim refugees that resettled to the U.S. will experience the most decrease in comparison to other religions. We decided to visualize this trend using a bar chart, faceted by the year. We focused on the proportions of each religion for each year instead of the actual number of individuals to better compare each relgion across the years. As one may notice, for a given year, the proportions may not add up to 1 because as mentioned previously, we will be looking at the top 4 religions (see the end of section 3.2 Cleaned Data Format).

Code

We can see that whereas the proportion of Christian refugees stayed pretty consistant over the 10 years, the proportion of Muslim refugees first increased from 2009 to 2015, and then decreased from 2016 to 2018. Similarly, the proportion of the Hindu refugee population also decreased from 2013 on, whereas the proportion of Buddhist refugees stayed rather consistent throughout the 10 years.

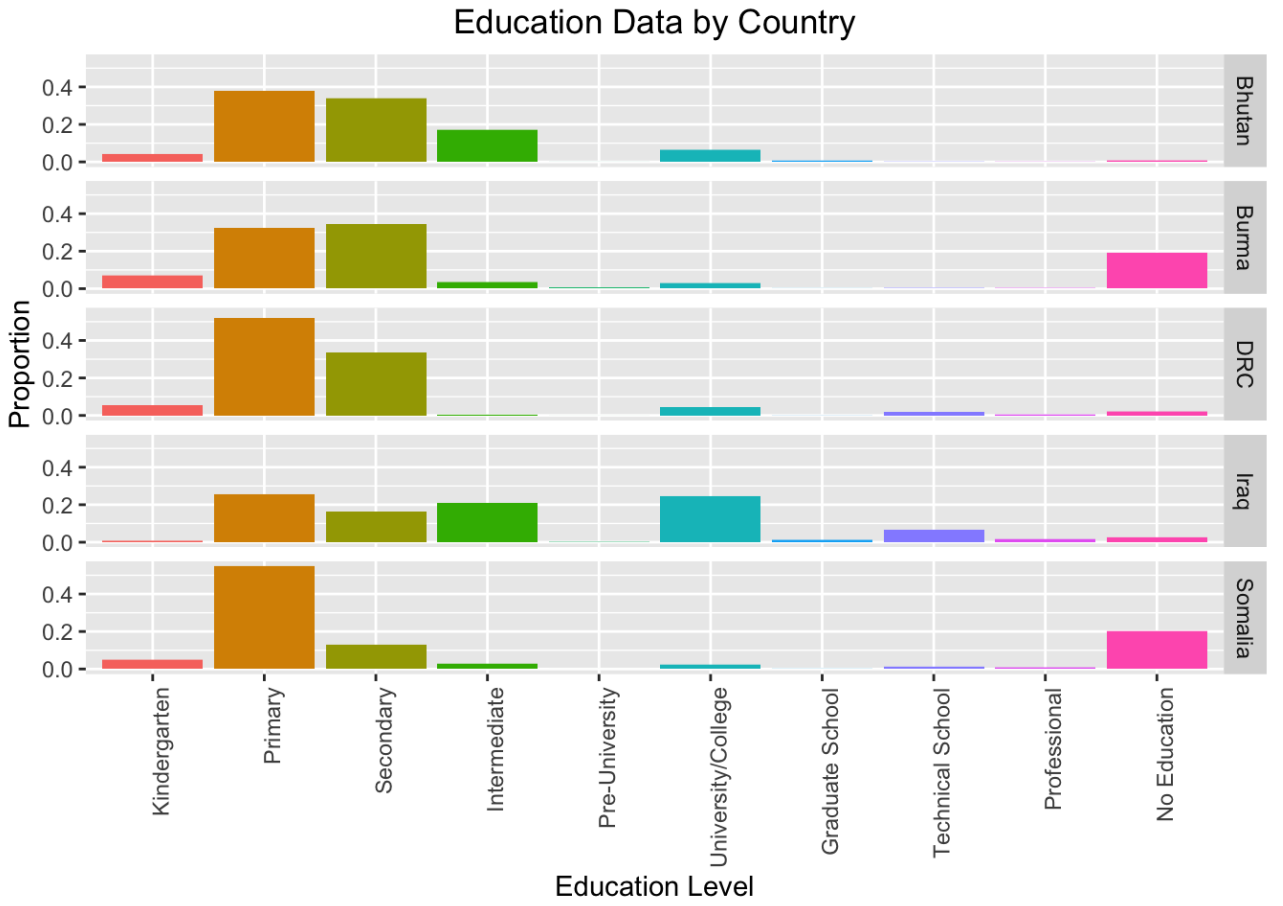
In order to further examine the resettlement pattern of individuals within each religion, we will be providing an interactive visualization in a later part of this report.

5.3.2 Education Level

Refugee children are found to be five times more likely to be out of school than their non-refugee peers. According to the UNHCR, 76% of refugee adolescents were not in secondary school, only 61% of refugee children attend primary school, and only 3% of refugees enroll in a college or university (https://www.unrefugees.org/refugee-facts/statistics/ (https://www.unrefugees.org/refugee-facts/statistics/)).

We decided to visualize the education level attained by refugees resettled in the U.S. from 2009 to 2018 with a bar chart faceted by country. We focused on the proportions of each education level for each country instead of the actual number of individuals to better compare each education level across the countries.

Code

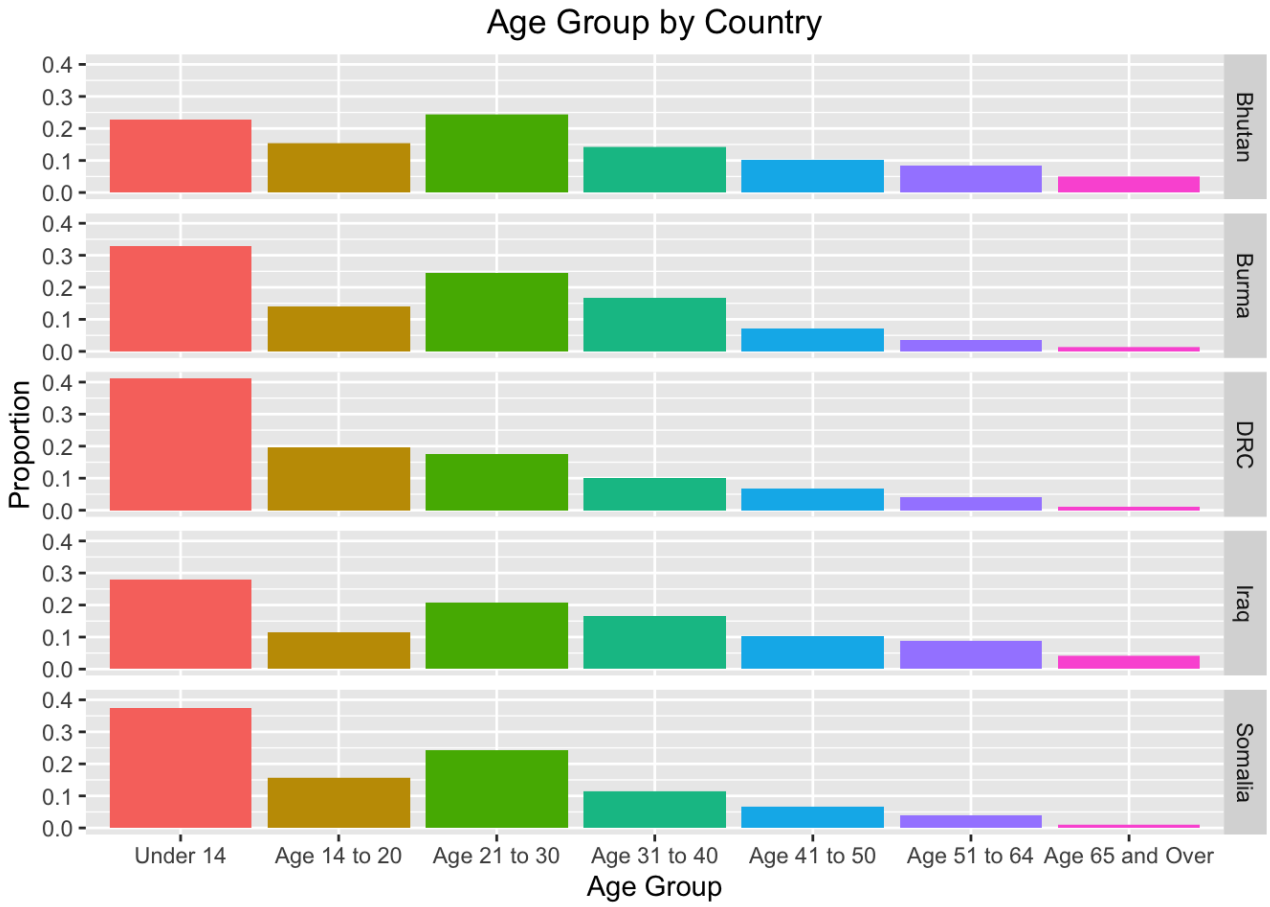


We can see that for all of the 5 countries, most of the refugee population have only attained an education level of primary school or lower. The DRC and Somalia have the highest proportion of refugee population with a primary school degree, followed by Bhutan, Burma, and then Iraq. About 30% of the refugee population in Bhutan, Burma, the DRC have a secondary school degree, whereas less than 20% of the refugee population in Iraq and Somalia have a secondary school degree. We can see that less than 10% of the refugee population in each of the 5 countries have obtained a degree higher than professional school.

5.3.3 Age Group

In order to visualize the distribution of age groups within the refugee resettlement population from each of the 5 countries, we used a bar chart faceted by country. We focused on the proportions of each age group for each country instead of the actual number of individuals to better compare each age group across the countries.

Code



We can see that DRC and Somalia have the highest proportions of refugees who are under 14.

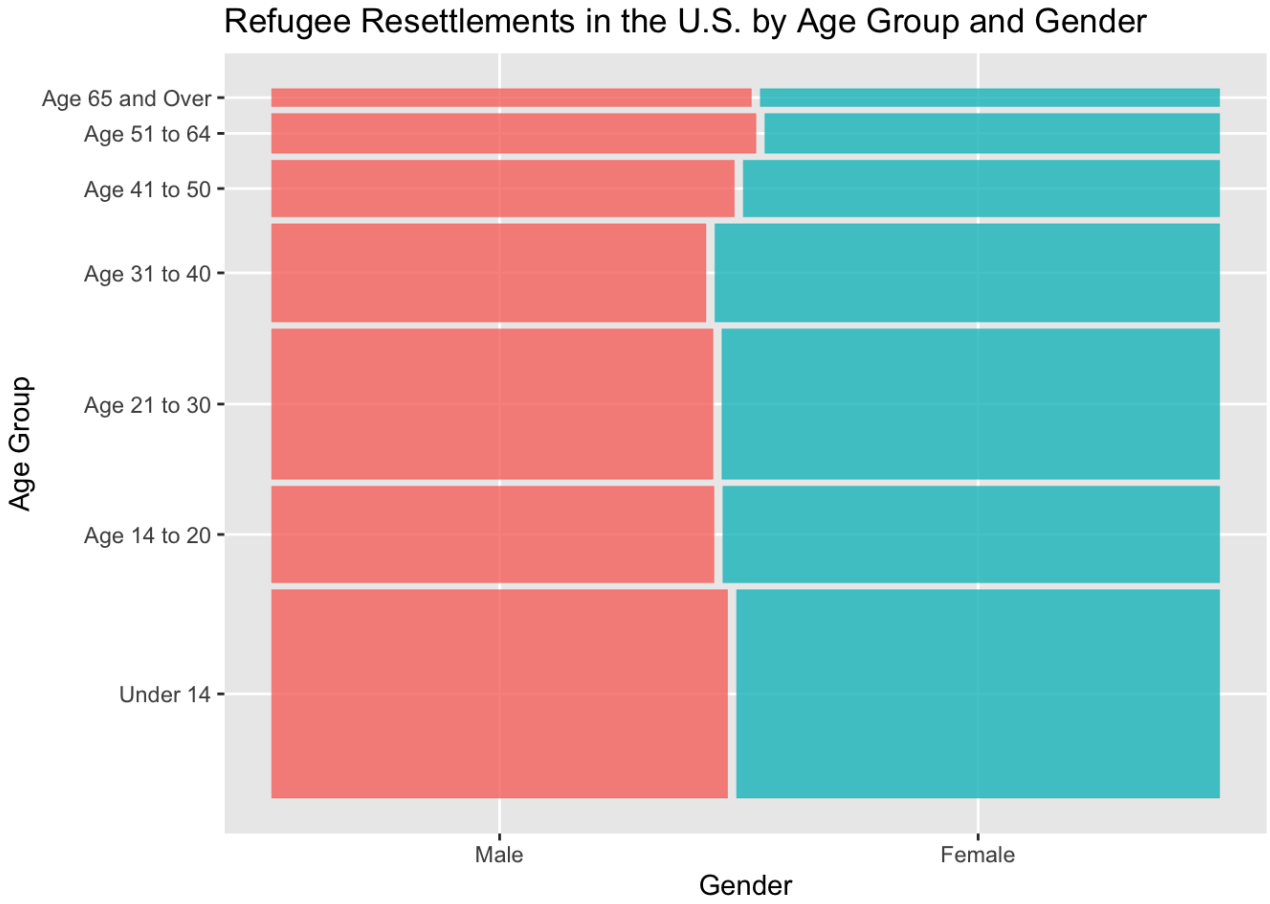
5.3.4 Multidimensional Analysis

In order to obtain an overview of the data and observe whether there are any correlations among the demographic variables, we decided to examine the relationships between a few variables using mosaic plots. The specific variables used for multi-dimensional analysis are provided below.

Age Group and Gender

We examine the correlation between age groups and gender in the refugee resettlement population. Our original assumption was that the two variables would be independent of each other as events that led to refugeee resettlement should have the same effect on different age groups and genders.

Code

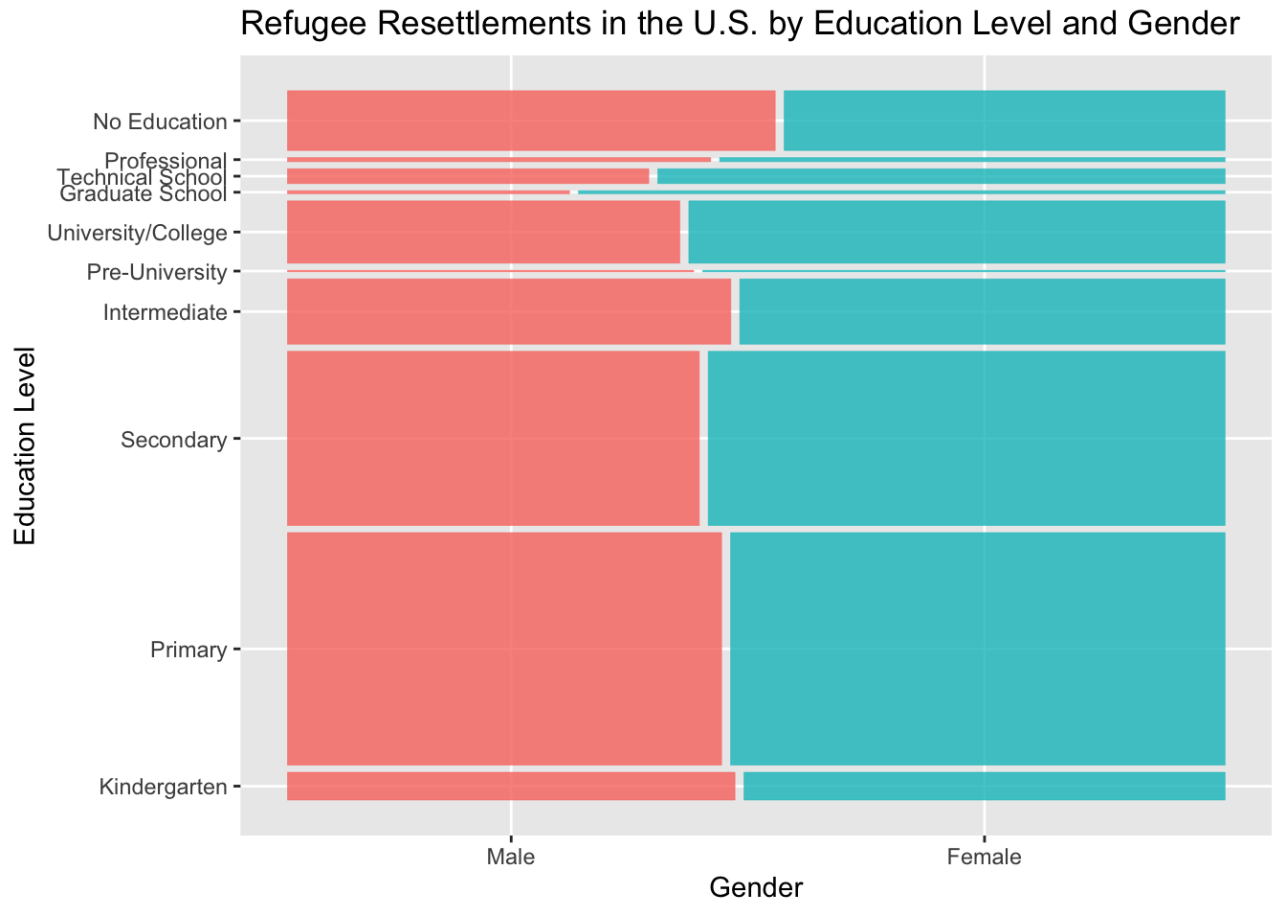


We can observe that the mosaic plot shows us little to no correlation between the two variables. Throughout all age groups, we can see equal distribution among males and females. Although we can see that there are slightly more males than females in the older age groups (age 41 and older), the difference is quite trivial.

Education Level and Gender

We also examine the correlation between the education and gender in the refugee resettlement population. Our original assumption was that education would be dependent on gender due to social and cultural conventions that often result in males being prioritized over females to attend school.

Code



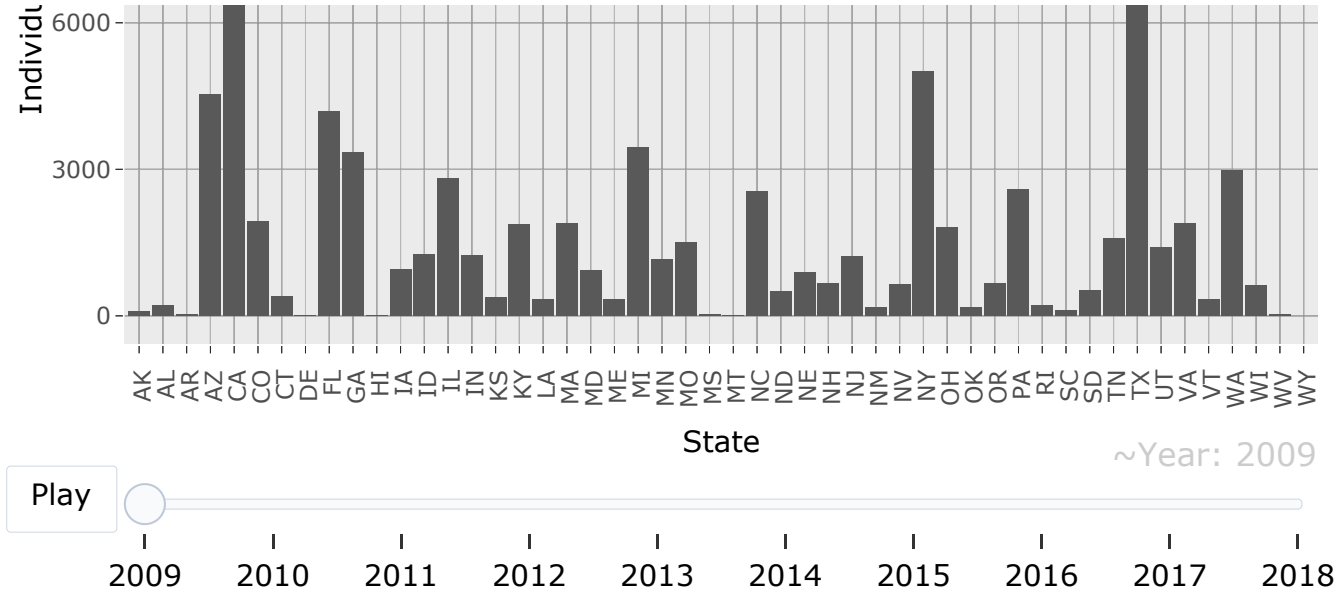
As we can see, the mosaic plot shows us little to no correlation between the two variables. Contrary to our hypothesis, the distribution of gender within each education level is almost consistent across all education levels. Although there are slightly more females who had obtained an education level of higher than professional school (professional, technical and graduate school) than males, there is no significant difference between the education levels of females and males.

Given the nature of our topic and data, we believe that multidimensionality is not the most informative factor in our analysis.

6 Interactive Component

6.1 Geographics

Code



Through this interactive graph, we can gain a better understanding of the refugee resettlement trends within the U.S. states (2009 - 2018).

In terms of the overall trend, we can observe a significant decrease in overall refugee resettlements in the U.S. from 2009 to 2018. While there was a slight increase from 2015 to 2016, the numbers dropped drastically from 2016 onwards. We can also note that the two states with the largest refugee resettlements are California and Texas, and this has remained constant during the entire period. Interestingly, 2009 was the only year where California accepted more than 9000 refugees. Other states have never exceeded this number.

6.2 Demographics: Religion

To dive further into religions of refugees, we visualized the breakdown of Hindu and Muslim refugees over time in the bar charts below. In the drop down menu, the options to select are:

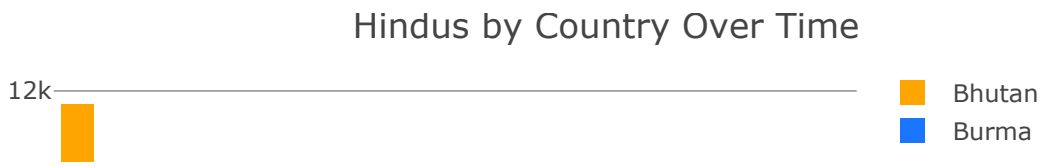
- All Individuals: count of individuals in each religion by country
- All Proportions: proportions of each country within a religion

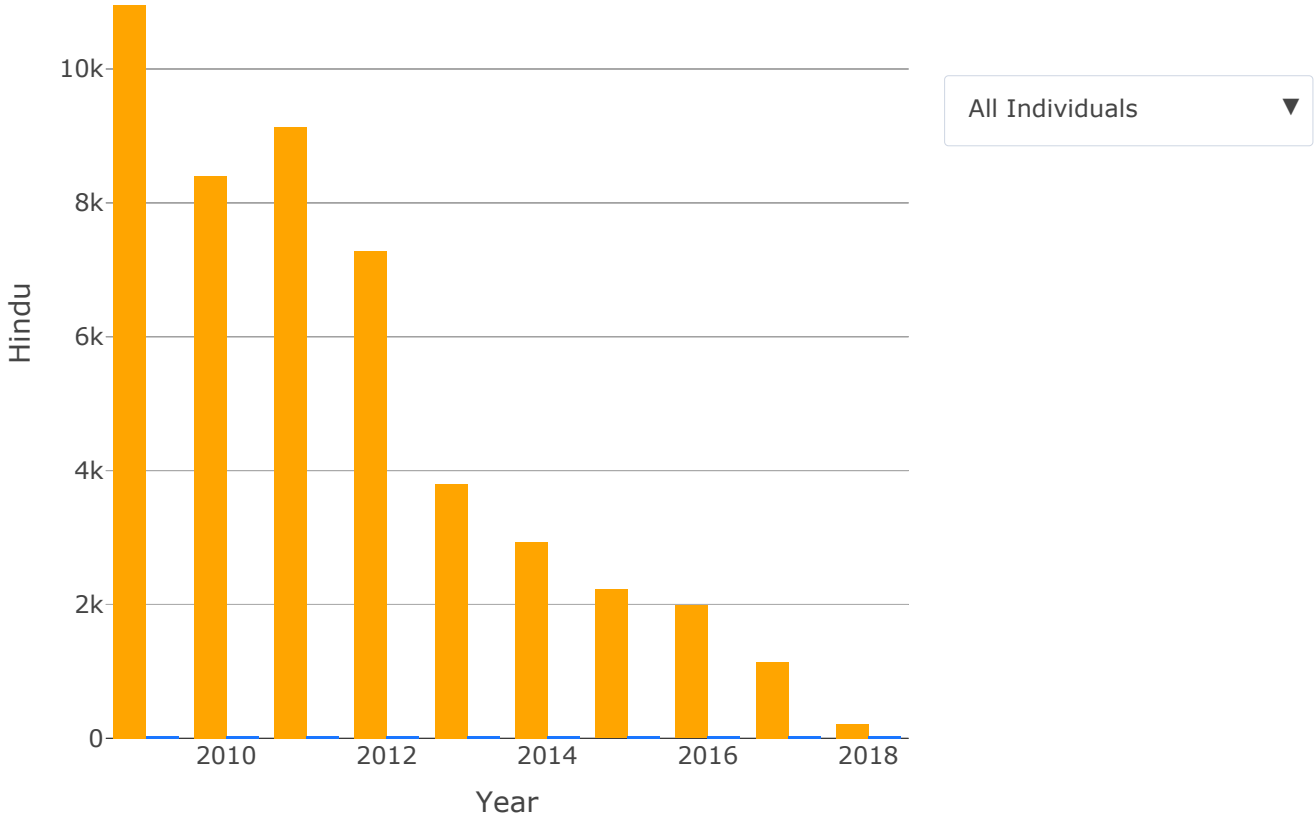
In addition to these two options, there are options to see the breakdown of each category by country. For example, “Hindus from Bhutan” means number of Hindu refugees from Bhutan over time. Moreover, “Hindus from Bhutan in Proportions” means proportion of refugees from Bhutan within Hindu refugees over time.

The first bar chart shows that the number of Hindu refugees decreased steadily in the past 10 years, mostly driven by Bhutan. We can observe that refugees from Bhutan account for more than 99% of Hindu refugees, which decreased from nearly 12,000 to 200. This reduction explains the overall decrease in Hindu refugees over the past decade.

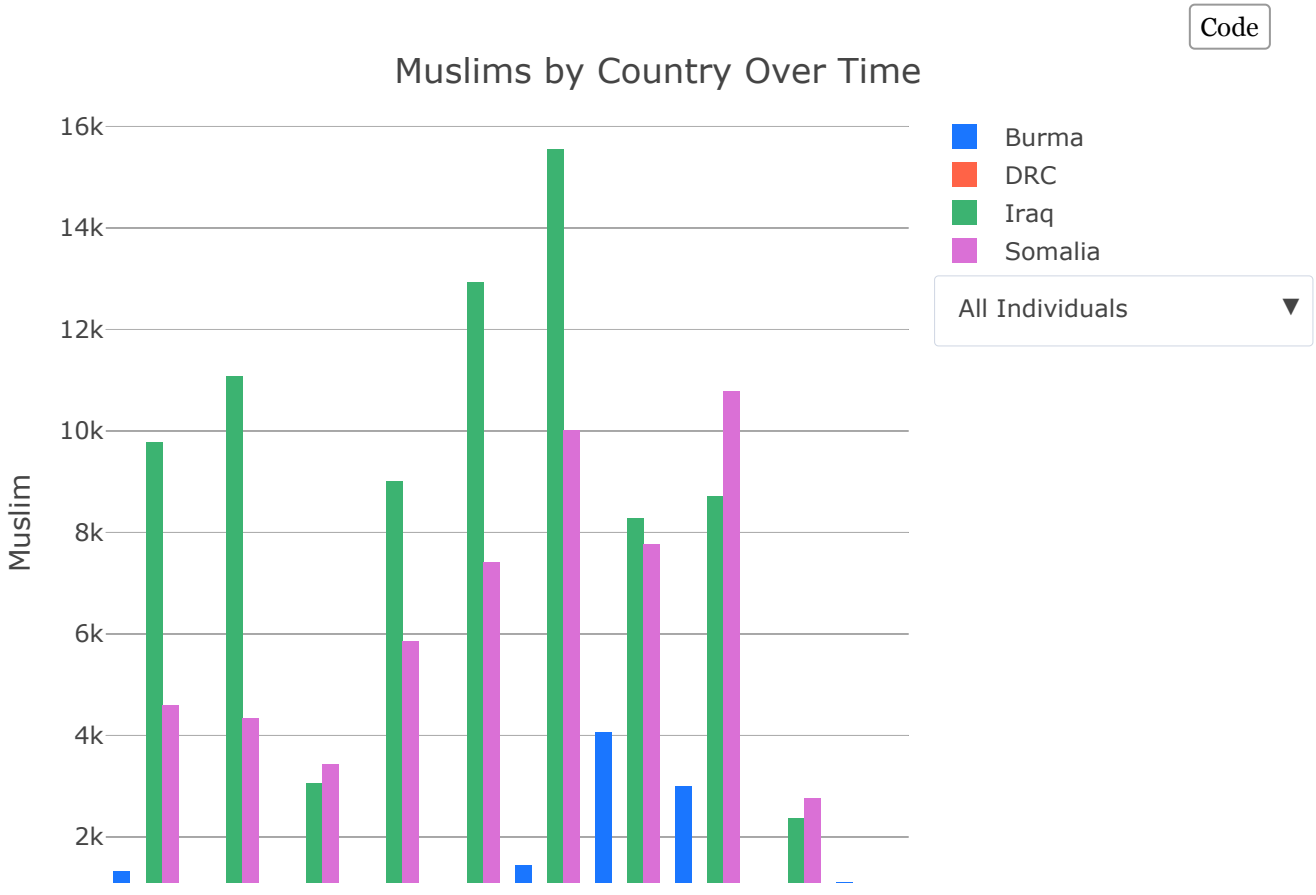
Code

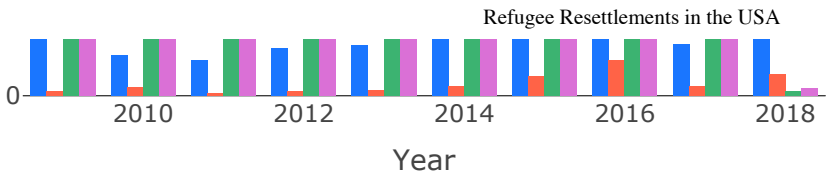
Code





In the second bar chart, we show the same breakdown among Muslim refugees. In the "All Individuals" chart, we can see that Muslim refugees have dropped drastically since 2017, mainly driven by Iraq and Somalia. This observation is more evident in the individual bar charts for those countries. For example, between 2016 and 2017, Muslim refugees from Iraq decreased by more than 6,000 individuals from 8,724 individuals, which is nearly a 75% reduction.





7 Conclusion

Research shows that refugees contribute significantly to the U.S. workforce and society. On average, refugees participate in the labor force at higher rates, their earnings rise, and their use of public benefits declines. Those who arrive when they are young often goes on to finish college. Refugees also contribute to local communities by working in key industries, revitalizing distressed neighborhoods, and adding diversity(https://www.urban.org/urban-wire/debate-versus-reality-refugees-us (https://www.urban.org/urban-wire/debate-versus-reality-refugees-us)).

However, under the Trump administration's broader attack on legal immigration programs, refugees are treated as a burden and a potential threat to the nation. Despite the rise in overall number of refugees globally, the United States set an extremely low refugee admissions ceiling (45,000) in 2017, which had no intention of meeting. It has also tightened the special clearance procedures for refugees from mostly Muslim majority states so that virtually none can enter. The administration has thus put the United States on pace to resettle the lowest number of refugees in USRAP's 38-year history, despite the record levels of forced displacement in the world (https://doi.org/10.1177/2331502418787787 (https://doi.org/10.1177/2331502418787787)).

This current report aims at examining the refugee resettlement trend in the United States over the past decade, from 2009 to 2018. It focuses on the top 5 refugee origin countries, Burma, Iraq, Somalia, Bhutan, the Democratic Republic of the Congo. It visualizes the overall resettlement trend, how it is affected by events within the United States and the countries of refugee origin, and the demographic breakdowns of the refugee population. This observation led us to question what the refugee resettlement trend has been for the past decade and what are the main factors driving this trend.

Overall,the most significant U.S. refugee resettlement trend happened in 2016, under President Trump's administration. The overall refugee resettlement population in the U.S. fell drastically. This is accompanied by a drop in the Muslim population within the refugee population. On top of the U.S. refugee admission policies, we can also see that the refugee resettlement pattern was influenced by events within the countries of refugee origin. This is exemplified by the drop in Iraq refugee resettlement to the U.S. when President Obama withdrew the U.S. forces from Iraq in 2011. Delving deeper, we can also see that the refugee population was made even more vulnerable given the lower overall education level and proportion of individuals younger than 14 in the refugee population. Looking within the U.S., we can see that the geographical makeup of the states had an effect on the refugee resettlement as well. Coastal states/ states bordering neighboring countries, like California, Texas, Washington and New York, had the highest number of refugees resettled in these states, accounting for more than 40% of the total refugee population in the U.S.

7.1 Limitations

Whereas this report provides a detailed analysis into the refugee resettlement in the U.S. in the past 10 years,its limitations are as follows:

1. Our analysis is limited to only the top 5 refugee origins and top 4 religions.
2. Our analysis is restricted to only the last 10 years.

For future analysis, it would be helpful to expand our dataset to include more information.

7.2 Future Directions

Overall, given the current observed trend in refugee resettlement to the U.S., we can see that the future of the refugee resettlement program is uncertain, despite its long history and the success and contributions of refugees in the U.S.

Shockingly, there still exists a gap between refugee admissions policy, and the reality of who refugees are. Policy conversations should be informed by the reality of the global refugee population, and their contribution to communities across the country. Despite their challenging circumstances, the fact that refugees contribute to the vitality of communities across the U.S. should be an evidence that they should not be seen as a threat to national security and economy. In a time like this, it is crucial that we drop our differences and come together as one to overcome this global crisis.