# Data Analysis of Population Migration around the world over the years using python

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## Abstract-

The data provided in the file 'UN_Migration.csv' was originally created by the international organization of Migration which is a United Nations agency that provides services and advise concerning to governments and migrants.

Since the earliest times, People have been on the move. Some people move in the search of work or economic opportunities, to join family, or to study. Others move to escape the conflict, persecution, terrorism, or human rights violation. Today, more people than ever live in a country other than the one in which they were born.

Understanding the changes in scale, emerging trends, and shifting demographics related to global social and economic transformations, such as migration help us make sense of the changing world we live in and plan for the future.

According to World Migration reports, as of 2019 the number of international migrants was estimated to be 272 million globally, 51 million more than in 2010. Nearly two third were labor migrants. International migrants comprised 3.5 percent of the global population in 2019 compared to 2.8 percent in 2000. While many individuals migrate out of choice, many others migrate out of necessity.

## Introduction-

The long-term and growing evidence on migration and mobility shows that migration is in large part related to the broader global economic, social, political, and technological transformations that are affecting the wide range of high priority policy issues. As the processes of globalization deepens these transformations increasingly shape our lives – in our workplace, in our homes, in our social lives as we go about our day-to-day life.

The number of people has been constantly increasing that are able to access information and services around the world. There is also that we are in the middle of uncertainty period and this report focuses on aspects of developments in world population migration over the last 20 years period. The world has been constantly witnessing historic and record-breaking changes at the global levels. The scale of international migration increases in line with recent trends.

The number of international migrants is estimated to be almost over 272 million globally which includes nearly two-third of it being labor migrants. It is widely recognized that the scale and pace of global population migrations is difficult to predict with accuracy as it is connected to many factors and events (such as instability, economic crisis, terrorism, conflicts, etc.). The long-term data of global population migration is not uniform around the world but is structured by various factors based on economic, demographic technological advances, transportation access, and other factors.
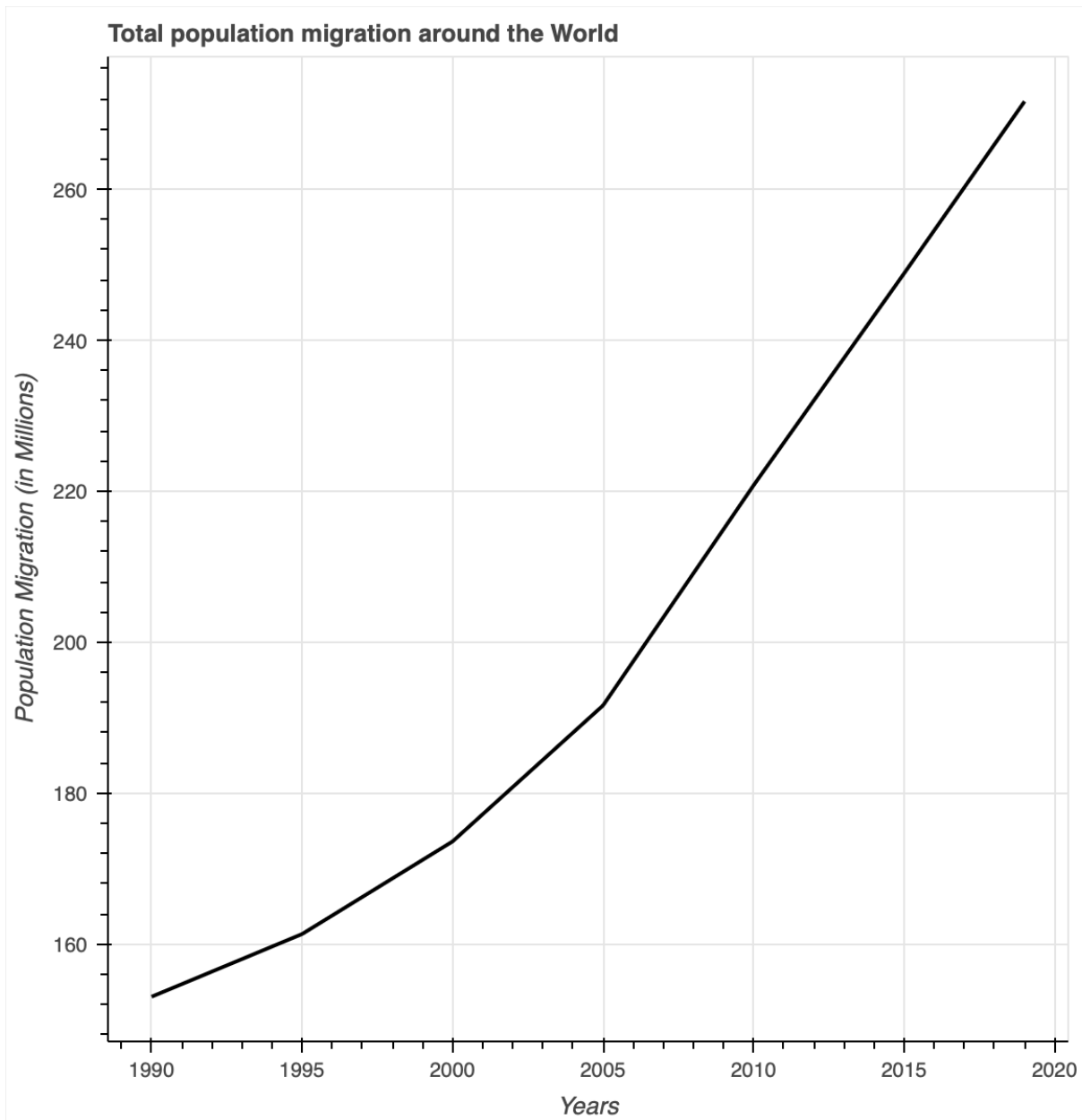
## Data Preparation:

The first step was the make sure that only the required data was extracted from the provided migration data file. The data file was imported through data frame function using pandas and cleaned according to requirement as it had many unwanted and unused rows & columns which has random characters as an input in place of no data available or no value added that had to be handled using the rename and replace functions to remove any unexpected error during data processing. The file was cleaned and sorted to contain only the required datasets.
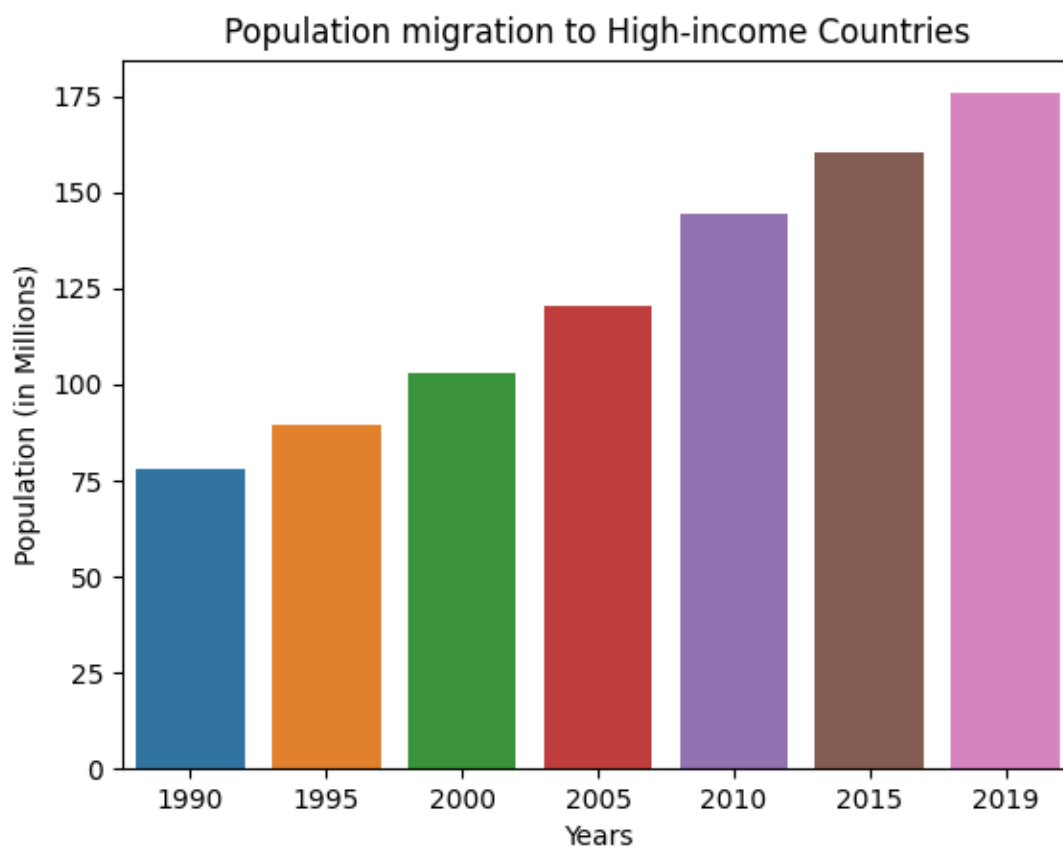
## Data representation:

The first step was to analyze the data to get the determined outputs to have an overview of how much was the total population migration across the world over the years. This was obtained by capturing the specific rows and columns from the datasets that shows the data acquired from the initial file processing which shows that the estimated number of international

migrants have increased over the past 3 decades. The total estimated 272 million people living in a country other than their countries of birth in 2019 was 119 million more than in 1990 when it was 153 million. While the propagation of international migrants globally has also increased over the period, it has been evident that the majority of people continue to love in the countries in which they were born. The population migration around the world has increased but also remained stable as a proportion of world's population.

Figure 1. Total Population migration around the world



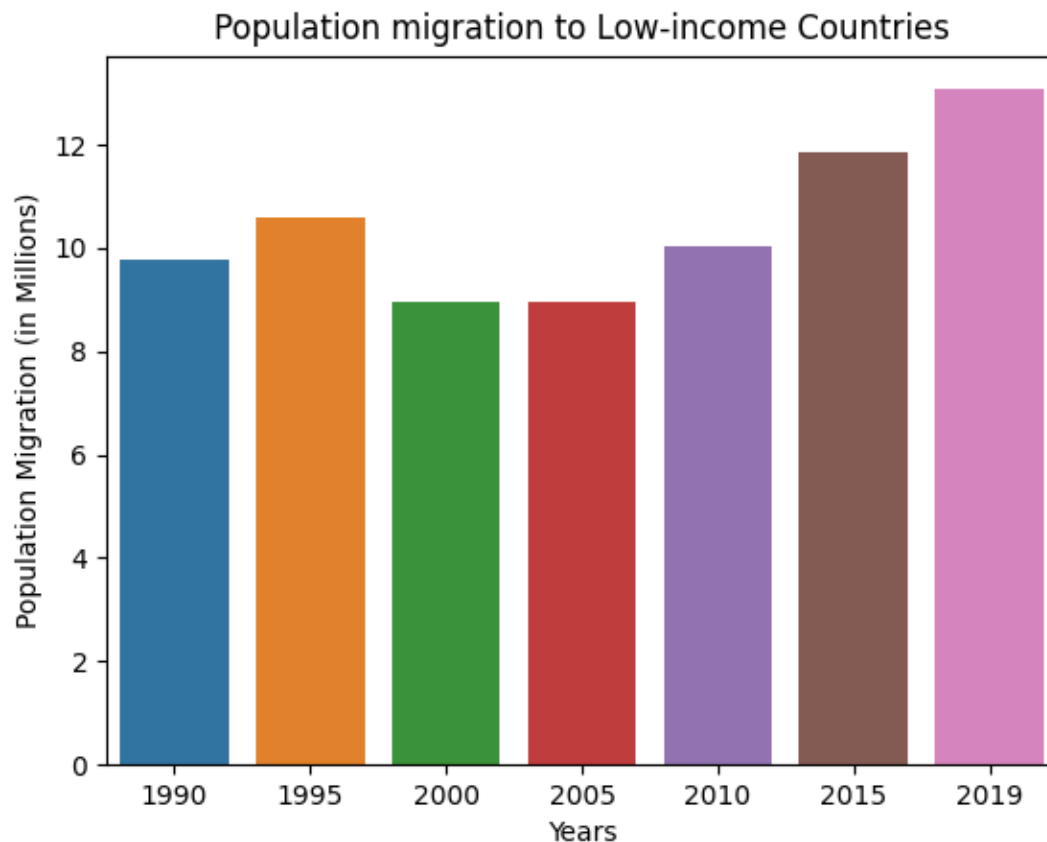**Total population migration around the World**

Then the dataset was filtered out to extract the population migration data of people migrating

from low-income country to a high-income country. The largest trend to be from lower

economic countries to larger economic countries where the pattern is likely to remain the same

for many years into the future as populations in some developing countries as projected to

increase in coming decades.

Figure 2. Population migration to high income countries:



Population migration to High-income Countries

In regard to the distribution of international migration population by income group, nearly two-third of the international migration resided in high-income countries in 2019 with around 176 million. This compares with around 13 million foreign born who resided in low-income countries in the same year where there is not much increase in number of people migrating compared to 1990 with almost 10 million.
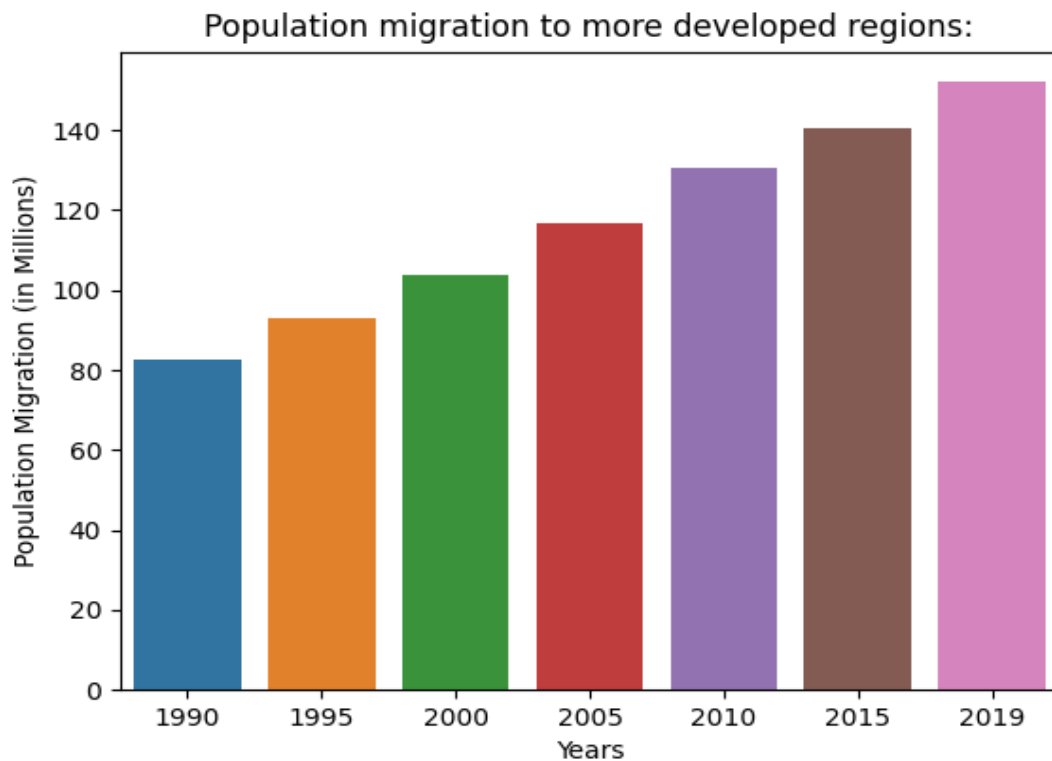
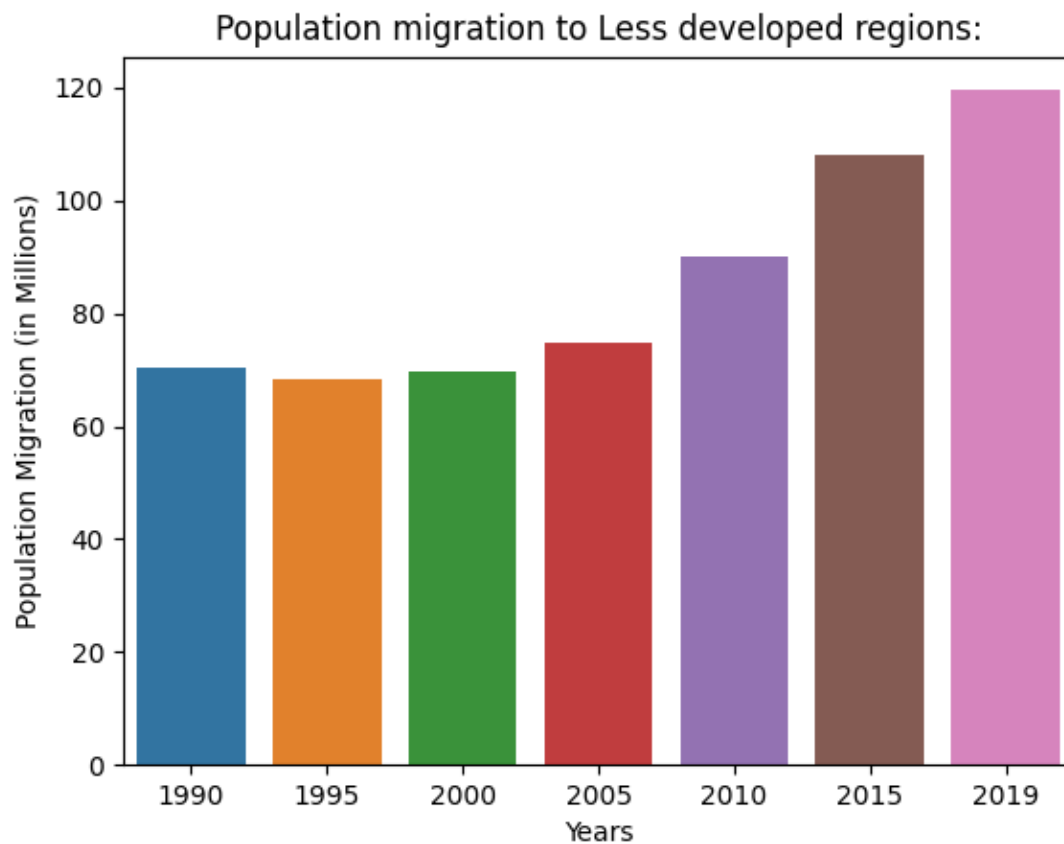Figure 3. Population migration to low-income countries:

Net migration from 1990 to 2019 saw a net positive flow of population from countries in

less developed regions to countries in more developed regions. In 2019, Roughly 150 million

global population migrated to a more developed region compared to the region of their birth

which has been a constant growth in population migration compared to nearly 85 million

migrations in 1990.

Figure 4. Population migration to more developed regions over the years.

International migration has significant impact of population size of many countries in regions of destination, but its much less significant in regions of origin as less developed or under developing regions has also had a constant growth in international migrants from nearly 70 million in 1990 to almost crossing 120 million migrations annually.

Figure 5. Population migration to less developed regions over the years.

Northern America region has been most Migration trends by high level of immigration as the demography of the international migrants continues to evolve. The number of foreign-born populations in Northern America region is very high compared to other regions. Below are the top 10 countries with largest proportional population change in Northern America between the years 1990-2019. The population change is in terms of growth with largest change in size of its population over the decades. Recent population changes have largely driven by migrants which remains main driver of population growth in the region.

Figure 6. Top 10 countries with major population migration to Northern America in 1990:

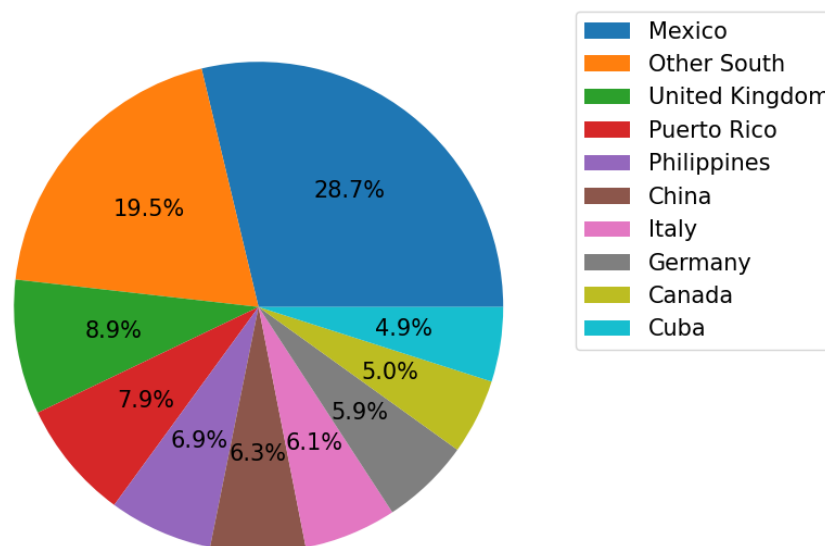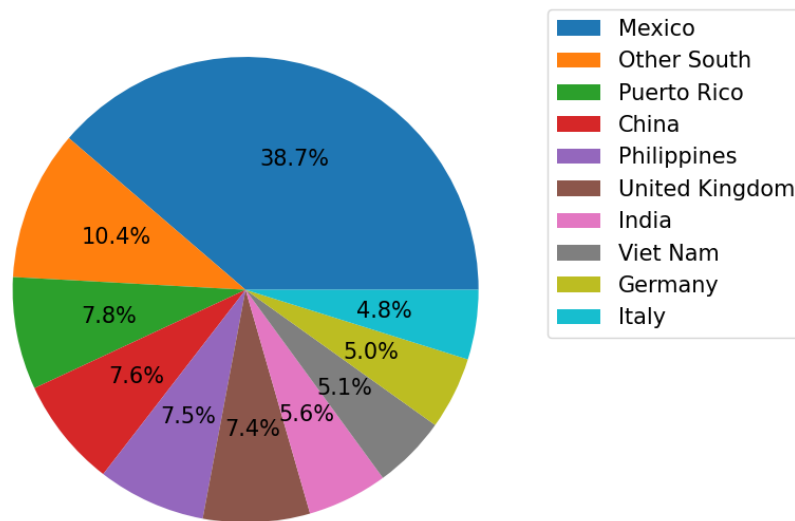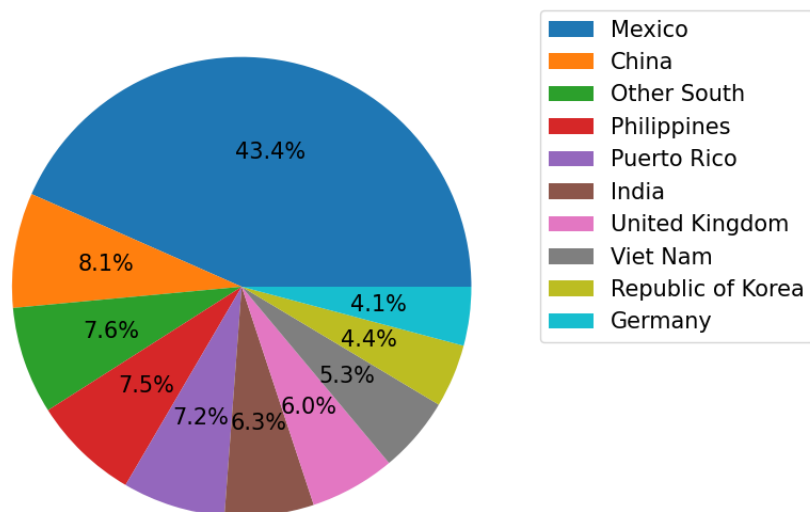**Top 10 countries with major population migration to Northern America in 1990**



Legend:
- Mexico
- Other South
- United Kingdom
- Puerto Rico
- Philippines
- China
- Italy
- Germany
- Canada
- Cuba

Values shown on chart: 28.7%, 19.5%, 8.9%, 7.9%, 6.9%, 6.3%, 6.1%, 5.9%, 5.0%, 4.9%

Figure 7. Top 10 countries with major population migration to Northern America in 1995:

**Top 10 countries with major population migration to Northern America in 1995**



Figure 8. Top 10 countries with major population migration to Northern America in 2000:

**Top 10 countries with major population migration to Northern America in 2000**

Figure 9. Top 10 countries with major population migration to Northern America in 2005:

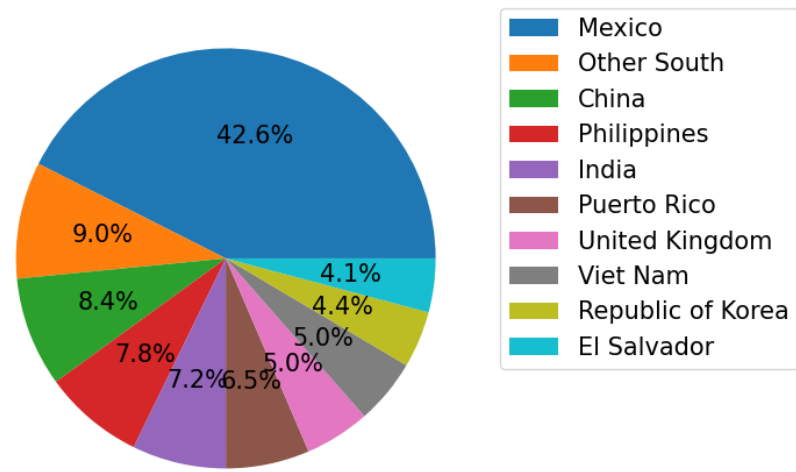**Top 10 countries with major population migration to Northern America in 2005**



Figure 10. Top 10 countries with major population migration to Northern America in 2010:

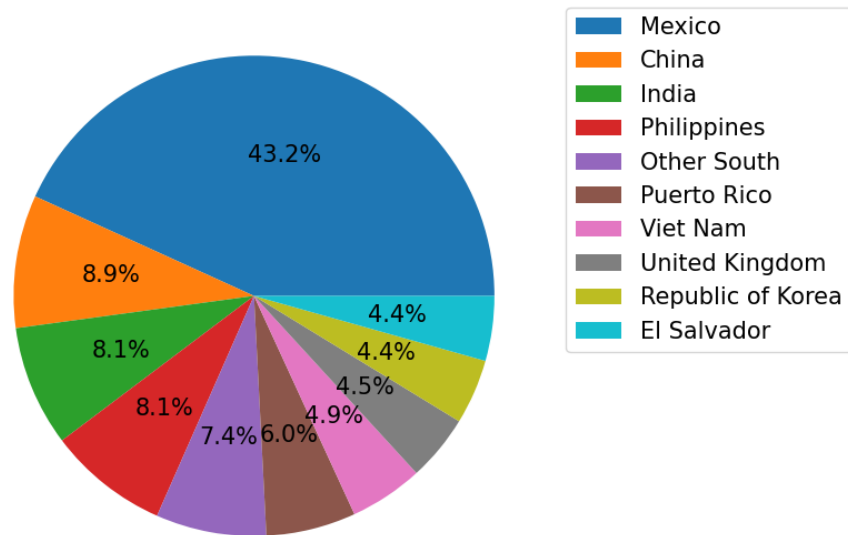**Top 10 countries with major population migration to Northern America in 2010**

Figure 11. Top 10 countries with major population migration to Northern America in 2015:

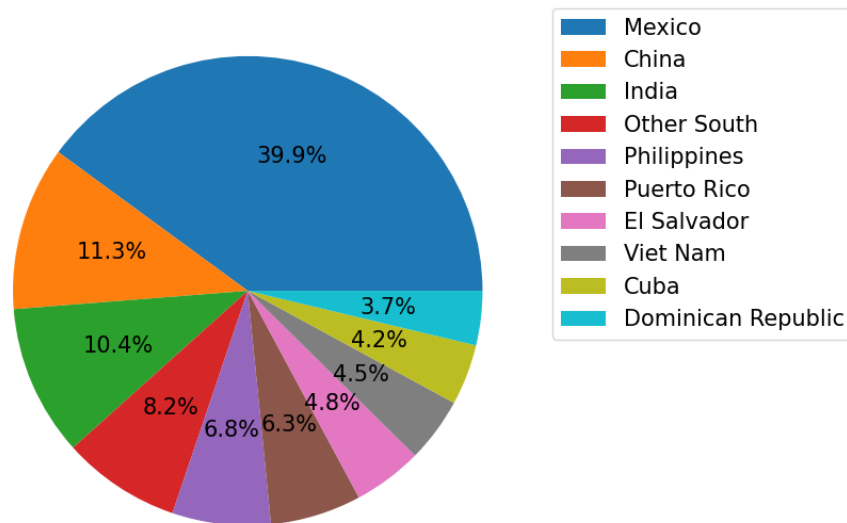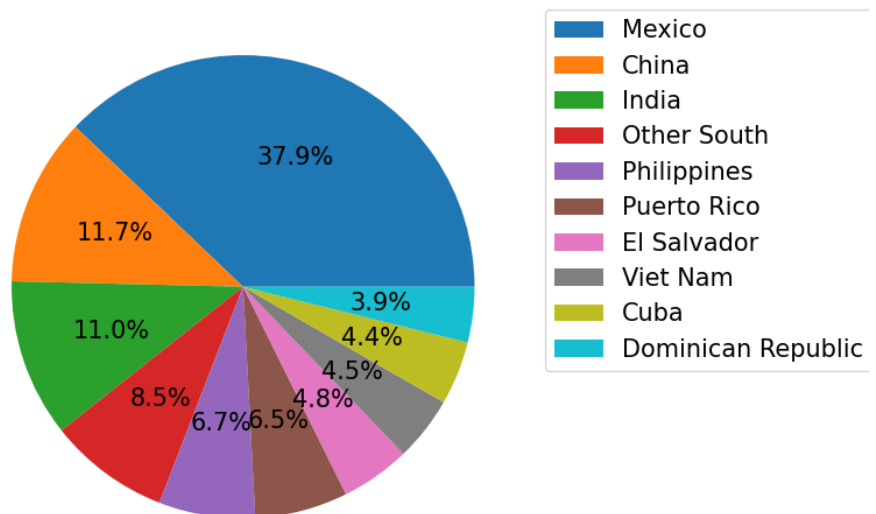**Top 10 countries with major population migration to Northern America in 2015**



Legend:
- Mexico
- China
- India
- Other South
- Philippines
- Puerto Rico
- El Salvador
- Viet Nam
- Cuba
- Dominican Republic

39.9%, 11.3%, 10.4%, 8.2%, 6.8%, 6.3%, 4.8%, 4.5%, 4.2%, 3.7%

Figure 12. Top 10 countries with major population migration to Northern America in 2019:

**Top 10 countries with major population migration to Northern America in 2019**



Legend:
- Mexico
- China
- India
- Other South
- Philippines
- Puerto Rico
- El Salvador
- Viet Nam
- Cuba
- Dominican Republic

37.9%, 11.7%, 11.0%, 8.5%, 6.7%, 6.5%, 4.8%, 4.5%, 4.4%, 3.9%

## Conclusion:

It is important to understand migration and displacement of population and how they are changing globally considering the individual as well as local communities. Popultion migration has been one of the oldest phenomenon that goes back to earlist times of history. Its manifestations and global impacts has changed over the period of time as the world gets more and more globalizd. While it is entirely true that population mugration patterns almost relate to the social, economical, processes that have evolved over the generations fo r the greater diversity in migration process. The global data shows the displacement caused due to various factors that remains record breaking high. The global impact in migration makes this clear and emphasizes that a global in understanding the trends & evolving patterns with processes to support the development of evidence based results.

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