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Introduction

The probability that migration will increase in the future in most countries around the world is very high, especially as the digital economy emerges and develops; multinational corporations' increasing role, and the simplification of border crossing. It is logical that the relationship between the quality of life in countries of origin of potential migrants and the countries of destination play a significant role in migration processes (Podra, Kurii, Alkema, Levkiv, & Dorosh, 2020; Quak, 2019).

My home country, Nepal, is a developing country and the GDP per capita is below the worldwide average. In Nepal, many folks go to foreign countries, including India, Dubai, United States of America, Canada, UK, etc., to earn a living and feed their families back home. So, I am interested in exploring if this a common trend among other countries in the world as well, i.e., if people are more likely to leave from poorer countries and emigrate to richer ones. It's also difficult to find studies of migration's impact on a host country that go beyond impact and include the contribution to the overall economy, particularly to growth of GDP. Therefore, the aim of this project is to explore the factors responsible for individuals to migrate to another country. My primary research question for this project is, “Are people more likely to immigrate out of a country when it has a lower Gross Domestic Product (GDP)?”

Exploratory Data Analysis

A summary of initial analysis of net migration, Gross Domestic Product, Population density, Service, and Phones can be found in *Table 1.* The response variable is net migration which is the difference between the number of immigrants and the number of emigrants throughout the year, expressed in percentage. The EDA showed that net migration has a mean of 0.0381 and a standard deviation if 4.87. It has a maximum value of 23.06 and a minimum value of -20.99. After making the correlation table, some variables are more statistically significant as compared to other variables. I decided to work with the variables seen in Table 1 are the variables have higher correlation to net migration as compared to other variables. The mean

**Table 1:** Description of the most relevant numerical variables in the model

GDP per capita readings for the countries is $9716.44 per capita and standard deviation is 10063.5. The mean population density for the countries

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Mean | Median | SD |
| Net Migration | 0.0381 | 0 | 4.87 |
| GDP | 9716.44 | 5600 | 10063.5 |
| Pop. Density | 382.152 | 79.5 | 1667.24 |
| Service | 0.566 | 0.566 | 0.16057 |
| Phones | 236.59 | 181.6 | 226.835 |

is 382.152 per square mile and standard deviation for population density is 1667.24. The mean percentage of composition of GDP by service sector is 0.566 and the mean percentage of composition of GDP by phones is 236.59 per thousand phones.

Chart, box and whisker chart

Description automatically generatedFrom Figure 1, we can compare the net migration according to different regions. As we can see from the figure western Europe has the highest number of immigrants and Baltics and Commonwealth of independent states have the highest number of emigrants. Net immigration is positive when immigrants- emigrants > 0 and is negative when immigrants - emigrants < 0. Therefore, all the means above 0 like Asia, Near East, and western Europe has more immigrants and other regions like Baltics, Commonwealth of independent states, Eastern Europe, Northern Africa, Oceania, Sub-Saharan Africa, etc. has more emigrants.

**Figure 1:** Mean migration per region.

As further analysis continues, I will run multiple linear regression models with Net Migration as the response variable and GDP per capita, population density, phones, and service as explanatory variables, examining their relationship with net migration. I will also be trying out different interaction terms and log transformation to see if I can get a better correlation between my response variable and explanatory variables.