**Impact of Foreign Aid on Developing Countries in Africa**

This analysis seeks to explore the following questions regarding the impact of foreign aid on developing countries in Africa: How is foreign aid distributed? Is there a relationship between foreign aid and mortality? And finally, is population distribution related to foreign aid?

Our hypotheses are that a) Foreign aid is predominantly provided to low-income countries, b) There is a negative correlation between foreign aid and mortality, and c) Countries with higher populations will receive more foreign aid.

The analysis is based on data collected by U.S. Agency for International Development (USAID), U.S. Department of State, and World Bank Data. Included are 32 developing countries in the African continent, and the data spans from 2000-2022.

Three visualizations address the first question of how foreign aid is distributed. The first is a descending bar chart which depicts the total aid amount given to each country.

From this we can conclude that Ethiopia, Kenya, Nigeria, and Uganda received the most aid from 2000-2022, whereas Sao Tome and Principe, Samoa, Gabon, and Togo received the least. While none of the top recipients of aid were classified as upper income, there were a few lower income countries that received the only a small amount of aid.

The second is a line chart that shows the total aid distributed by income group. This plot shows aid in billions distributed over the years, and each income group is represented as its own line.

We can conclude from the line chart that the lowest income group was receiving the most aid and the highest income group the least. The most noteworthy aspect of this plot is the spike in aid between 2006-2008, when even the highest income group saw a small increase. This was the time period when the U.S. had a massive increase in the foreign aid budget.

The third visualization related to the question of how foreign aid is distributed is a horizontal bar chart that shows transaction type by income group. The chart shows that half of all transactions were obligations, or agreements to provide future payments, and the smallest percentage of transactions were classified as initial allocations.

To explore the question of whether there is there a relationship between foreign aid and mortality, a linear regression analysis was conducted. The statistical analysis resulted in a T-value of -2.54 and a P-value of 0.01. These results show there is enough evidence to reject the null hypothesis and accept the alternative hypothesis.

We can conclude that foreign aid contributions, within the scale of this analysis, decrease the mortality rate of the population under 5 years old.

Linear regression was also used to determine if there is a correlation between population size and foreign aid. The r-squared value was 0.67, indicating there is a positive correlation between the two.