**ALY6070**

**Communication and Visualization for Data Analytics**

**ALY6070: Tableau Application**

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**Introduction**

The art of data storytelling, which involves distilling complex information and insights into comprehensible narratives using dashboards, scorecards, geographic data representations, and annotated visualizations, is a critical skill in data science. Professionals in the field are expected to assess, design, and execute visualization strategies that effectively communicate to a targeted audience, drawing upon essential principles of information design. Your task is to craft a standalone Tableau application that embodies these competencies.

This time I chose two applications, one from the dataset 2021 on the topic "What makes the world's happiest countries so happy?", and the other is a yearly dataset on "Estimating the prevalence and mortality of Tuberculosis by country. The other is a dataset spanning from 1990-2013 on "Estimating the prevalence and mortality of Tuberculosis by country."

**Tableau Application**

1. **Why do happiness indices vary between countries? (data source year 2021)**A screenshot of a graph

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**Why did you choose the types of visualizations that you did?**

I chose map visualization to give the audience a visualization because maps give an intuitive understanding and make it easier for us to identify and analyze problems.

Also, I chose the bar chart listing the three countries with a high happiness index and the three countries with a low happiness index. The colors are the same as in my maps, i.e. warm colors for the countries with high happiness index and cool colors for the countries with low happiness index.

In the end I utilized stacked bar charts to explain what causes different countries to have different happiness indices, and it was very interesting to see exactly what parts they could break down into.

**What story do the visualizations tell?**

The main story I'm telling with this visualization is why do different countries have different happiness indices? First, to give a geographic visualization, using warm and cold colors you will have a better idea of which region of the country has a high happiness index, and then list the specific high happiness index countries, as well as the low happiness index countries. Finally, answer the question of why it is different, and exactly what factors determine and explain this ladder scores.

1. **Estimated number of deaths from TB (within or without HIV) in the AMR Region**

**A screenshot of a map

Description automatically generated**

**Why did you choose the types of visualizations that you did?**

I opted for a side-by-side comparison of maps and bars.

The colors of the map indicate the difference in the total number of deaths in different areas.

For the bar graph I chose the top 10 countries in terms of total deaths to see how their general numbers stack up.

I did two sets of tests based on the condition with HIV and all other conditions without HIV, and we can see that there is a big difference in the total number of deaths between the two conditions, and the top 10 countries in terms of total number of deaths have changed.

But I can see from this that Brazil has a higher total number of deaths in both cases.

**What story do the visualizations tell?**

This story unfolded because HIV positive patients have a higher lethality rate after getting TB, and from that point I started my visualization to try to expose the quantitative relationship. Since I'm in the US now, I chose only one region, AMR, for my study.

As we can see from this, the total number of deaths due to HIV-positive conditions alone is also a significant number, compared to all other disease conditions excluding HIV.

This dashboard can be a lead-in for us to follow up and continue our research, he gives us a good perspective on these two diseases and paves the way for us to follow up and study their correlation.

**Reference:**

World Health Organization. (n.d.). *Data at WHO*. World Health Organization. https://www.who.int/data/

Helliwell, J. F., Layard, R., Sachs, J. D., Neve, J.-E. D., Aknin, L. B., & Wang, S. (2021, March 20). *World happiness report 2021*. The World Happiness Report. https://worldhappiness.report/ed/2021/#appendices-and-data