CRISP-DM Template for SDG Dashboard Design

This template will guide you through the CRISP-DM process while designing a dashboard focusing on one of the Sustainable Development Goals (SDG) indicators. Each section corresponds to a step in the CRISP-DM cycle. Provide detailed explanations and documentation of your work at each stage.

1. Business Understanding

In this section, define the objectives of your dashboard, which is the data-driven research question. Identify the specific SDG indicator you will focus on and explain the importance of this indicator to the broader SDG goals. Clearly state what you aim to achieve with the dashboard.

Key Questions to Address:

· - What is the purpose of the dashboard?

The purpose of this dashboard is to highlight specific causes of mortality that increase with alcohol consumption.

The research question "How does alcohol consumption correlate with mortality caused by suicide and poisonings in Australia, Canada, and the USA," is aimed to illustrate correlations between variables in these specific countries.

Through understanding and visualizing data from the SDG website, analysis will illustrate how alcohol consumption correlates with suicide and poisoning rates, and how these correlations differ between specific countries.

The study focuses on Australia, Canada, and the USA because of their reliable data quality, comparable socioeconomic profiles, and significant challenges related to alcohol consumption.

To begin, these countries have reliable data collection and reporting statistics. Due to developed systems of gathering data, the correlations between alcohol, suicides, and poisonings are very accurate compared to other countries.

The selection of the specific countries researched was very purposeful. Australia, Canada, and the USA share similarities in economic development, social policies, population, and geographical area. All three countries are massive,and populated with diverse inhabitants, which will increase generalisability.

Lastly, these countries, having difficulties with substance abuse, have created a focus on improving mental health and reducing drug use. Studying countries that are aware of and combating these issues is effective because it can encourage other countries to make the same progress in controlling alcohol consumption.

Overall this dashboard aims to highlight the effects of alcohol consumption in these specific countries.

· - Which SDG indicator are you focusing on?

Specifically, I will be focusing on indicators under sustainable development goal 3: "Ensure healthy lives and promote well-being for all at all ages." These include indicators 3.4.2, 3.5.2, and 3.9.3.

The definition of the SDG indicator 3.4.2 is the "suicide mortality rate" in the UN SDG framework. The suicide mortality rate is the number of deaths from suicide measured per 100,000 people in a given population.

The definition of the SDG indicator 3.5.2 is the "harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol" in the UN SDG framework.

The definition of the SDG indicator 3.9.3 is the "mortality rate attributed to unintentional poisoning" in the UN SDG framework. This measures the annual number of deaths per 100,000 people that are attributed to unintentional poisonings.

· - What insights do you hope to provide with this dashboard?

Through data analysis in this SDG data, I will uncover insights relating to:

● Trends in alcohol consumption over time and how these trends relate to mortality rates.

● Specific causes of death that exhibit the greatest sensitivity from alcohol consumption.

● Gender-specific patterns in alcohol-related mortality to support targeted public health strategies.

Through further research into alcohol consumption and mortality rates in the USA, Australia, and Canada, I hypothesize that visualizations will provide insights into how rising alcohol consumption impacts health outcomes, specifically, the drastic impact alcohol has on communities.

Business Objective: The purpose of this dashboard is to support advocacy for stronger policy reforms.

2. Data Understanding

Describe the data you are using to build the dashboard. Explain the sources of the data, the variables included, and any initial findings from exploring the data. Highlight any data quality issues or unusual patterns.

Key Questions to Address:

· - What are the sources of your data?

The data used is drawn from the United Nations Department of Economic and Social Affairs Statistics Division (SDG database website). The data is from the data series under the specific SDG indicators listed above (3.4.2, 3.5.2, and 3.9.3).

· - What variables are included in the dataset?

1. Country Name (Australia, Canada, USA)

2. Sex (BOTHSEX, Female, Male)

3. Alcohol consumption per capita aged 15 years and older within a calendar year (litres of pure alcohol). Separate columns include data collected in the years 2000, 2005, 2010, and 2015.

4. Mortality rate attributed to unintentional poisonings, by sex (deaths per 100,000 population). Separate columns include data collected in the years 2000, 2005, 2010, and 2015.

5. Suicide mortality rate rate (number of deaths from suicide measured per 100,000 people) Separate columns include data collected in the years 2000, 2005, 2010, and 2015.

6. Number of deaths attributed to suicide, by sex (number). Separate columns include data collected in the years 2000, 2005, 2010, and 2015.

· - Are there any data quality issues?

Data is missing in the year 2019 for Australia and Canada. Due to this fact, it is not valuable to compare data points in these years between countries.

All of the data for unintentional poisonings consists only of decimals increasing in tenths. This data is also all less than one. Due to this fact, the data will be very difficult to derive any analysis from and I will not focus on this data in my dashboard.

I added the data set of suicide deaths from the UN database. Initially, I chose to focus on the suicide mortality rate due to its comparison between countries and their population sizes. This approach was more effective, as the dashboard focuses on multiple countries.

· - What initial insights did you gain?

GeoAreaName	Sex	2000_alc	2005_alc	2010_alc	2015_alc
Australia	BOTHSEX	10.55397	10.8197	11.1012	10.3903
Australia	BOTHSEX	10.55397	10.8197	11.1012	10.3903
Australia	BOTHSEX	10.55397	10.8197	11.1012	10.3903
Australia	BOTHSEX	10.55397	10.8197	11.1012	10.3903
Australia	FEMALE	4.9208	5.05318	5.19734	4.87468
Australia	FEMALE	4.9208	5.05318	5.19734	4.87468
Australia	FEMALE	4.9208	5.05318	5.19734	4.87468
Australia	FEMALE	4.9208	5.05318	5.19734	4.87468
Australia	MALE	16.37168	16.76339	17.14478	16.06836
Australia	MALE	16.37168	16.76339	17.14478	16.06836
Australia	MALE	16.37168	16.76339	17.14478	16.06836
Australia	MALE	16.37168	16.76339	17.14478	16.06836
Canada	BOTHSEX	9.37614	9.75363	10.21275	9.91687
Canada	BOTHSEX	9.37614	9.75363	10.21275	9.91687
Canada	BOTHSEX	9.37614	9.75363	10.21275	9.91687
Canada	BOTHSEX	9.37614	9.75363	10.21275	9.91687
Canada	FEMALE	4.10505	4.28457	4.49131	4.34831
Canada	FEMALE	4.10505	4.28457	4.49131	4.34831
Canada	FEMALE	4.10505	4.28457	4.49131	4.34831
Canada	FEMALE	4.10505	4.28457	4.49131	4.34831
Canada	MALE	14.83141	15.4009	16.11701	15.63597
Canada	MALE	14.83141	15.4009	16.11701	15.63597
Canada	MALE	14.83141	15.4009	16.11701	15.63597
Canada	MALE	14.83141	15.4009	16.11701	15.63597
United State	BOTHSEX	9.05296	9.29658	9.34309	9.48589
United State	BOTHSEX	9.05296	9.29658	9.34309	9.48589
United State	BOTHSEX	9.05296	9.29658	9.34309	9.48589
United State	BOTHSEX	9.05296	9.29658	9.34309	9.48589
United State	FEMALE	4.04106	4.17317	4.19548	4.25284
United State	FEMALE	4.04106	4.17317	4.19548	4.25284
United State	FEMALE	4.04106	4.17317	4.19548	4.25284
United State	FEMALE	4.04106	4.17317	4.19548	4.25284
United State	MALE	14.32933	14.67914	14.74204	14.92437
United State	MALE	14.32933	14.67914	14.74204	14.92437
United State	MALE	14.32933	14.67914	14.74204	14.92437
United State	MALE	14.32933	14.67914	14.74204	14.92437

Alcohol consumption per capita within a calendar year (litres of pure alcohol)-

For men and women in Australia and Canada, alcohol consumption increased at similar rates in the years 2000 to 2005 and 2005 to 2010. Then, in the years 2010 to 2015, the alcohol consumption rate decreased at a similar rate.

For men and women in the USA, alcohol consumption increased in all years.

In all countries, there are much higher consumption rates in males than females with males consuming three times the amount of alcohol on average. Australia has the highest rate of consumption among all categories, with Canada in second, and the USA in third.

Overall, consumption is very uniform, remaining consistent among countries, sexes, and years.

Mortality rate attributed to unintentional poisonings, by sex (deaths per 100,000 population)-

ieoAreaName	Sex	2000_poison	2005_poison	2010_poison	2015_poison
Australia	BOTHSEX	0.4	0.3	0.2	0.1
Australia	BOTHSEX	0.4	0.3	0.2	0.1
Australia	BOTHSEX	0.4	0.3	0.2	0.1
Australia	BOTHSEX	0.4	0.3	0.2	0.1
Australia	FEMALE	0.2	0.2	0.1	0.2
Australia	FEMALE	0.2	0.2	0.1	0.2
Australia	FEMALE	0.2	0.2	0.1	0.2
Australia	FEMALE	0.2	0.2	0.1	0.2
Australia	MALE	0.5	0.4	0.2	0.1
Australia	MALE	0.5	0.4	0.2	0.1
Australia	MALE	0.5	0.4	0.2	0.1
Australia	MALE	0.5	0.4	0.2	0.1
Canada	BOTHSEX	0.4	0.3	0.3	0.3
Canada	BOTHSEX	0.4	0.3	0.3	0.3
Canada	BOTHSEX	0.4	0.3	0.3	0.3
Canada	BOTHSEX	0.4	0.3	0.3	0.3
Canada	FEMALE	0.2	0.1	0.3	0.3
Canada	FEMALE	0.2	0.1	0.3	0.3
Canada	FEMALE	0.2	0.1	0.3	0.3
Canada	FEMALE	0.2	0.1	0.3	0.3
Canada	MALE	0.6	0.4	0.4	0.4
Canada	MALE	0.6	0.4	0.4	0.4
Canada	MALE	0.6	0.4	0.4	0.4
Canada	MALE	0.6	0.4	0.4	0.4
United State	BOTHSEX	0.4	0.4	0.4	0.4
United State	BOTHSEX	0.4	0.4	0.4	0.4
United State	BOTHSEX	0.4	0.4	0.4	0.4
United State	BOTHSEX	0.4	0.4	0.4	0.4
United State	FEMALE	0.2	0.3	0.3	0.3
United State	FEMALE	0.2	0.3	0.3	0.3
United State	FEMALE	0.2	0.3	0.3	0.3
United State	FEMALE	0.2	0.3	0.3	0.3
United State	MALE	0.5	0.5	0.5	0.6
United State	MALE	0.5	0.5	0.5	0.6
United State	MALE	0.5	0.5	0.5	0.6
United State	MALE	0.5	0.5	0.5	0.6

For men and women in Australia, the rates of poisonings largely decrease consistently from 2000 to 2015. This is the only country where there is a consistent change between years, however, one increase does occur in women from 2010 to 2015.

In both Canada and the USA, the rates stay consistent throughout the years.

Overall, the USA has the highest rates, followed by Canada, and then Australia. Men have two to three times higher rates in all categories compared to women.

The highest is men in the USA in 2015 with 0.6 deaths per 100,000 population, while the lowest is men in Australia in 2015 with 0.1 deaths per 100,000 population.

Overall, due to insignificant variation in data points, I will not use the poison mortality data to derive any conclusions made in this dashboard.

Suicide mortality rate (number of deaths from suicide measured per 100,000 people)-

GeoAreaName	Sex	2000_suicide	2005_suicide	2010_suicide	2015_suicide
Australia	BOTHSEX	12.7	11.2	11.7	13.2
Australia	BOTHSEX	12.7	11.2	11.7	13.2
Australia	BOTHSEX	12.7	11.2	11.7	13.2
Australia	BOTHSEX	12.7	11.2	11.7	13.2
Australia	FEMALE	5.6	5.1	5.7	6.8
Australia	FEMALE	5.6	5.1	5.7	6.8
Australia	FEMALE	5.6	5.1	5.7	6.8
Australia	FEMALE	5.6	5.1	5.7	6.8
Australia	MALE	19.9	17.3	17.7	19.7
Australia	MALE	19.9	17.3	17.7	19.7
Australia	MALE	19.9	17.3	17.7	19.7
Australia	MALE	19.9	17.3	17.7	19.7
Canada	BOTHSEX	11.9	12.2	12.1	13
Canada	BOTHSEX	11.9	12.2	12.1	13
Canada	BOTHSEX	11.9	12.2	12.1	13
Canada	BOTHSEX	11.9	12.2	12.1	13
Canada	FEMALE	5.7	6.2	6.4	6.8
Canada	FEMALE	5.7	6.2	6.4	6.8
Canada	FEMALE	5.7	6.2	6.4	6.8
Canada	FEMALE	5.7	6.2	6.4	6.8
Canada	MALE	18.3	18.2	17.8	19.2
Canada	MALE	18.3	18.2	17.8	19.2
Canada	MALE	18.3	18.2	17.8	19.2
Canada	MALE	18.3	18.2	17.8	19.2
United State	BOTHSEX	11	11.9	13.1	14.4
United State	BOTHSEX	11	11.9	13.1	14.4
United State	BOTHSEX	11	11.9	13.1	14.4
United State	BOTHSEX	11	11.9	13.1	14.4
United State	FEMALE	4.5	5.2	5.8	6.8
United State	FEMALE	4.5	5.2	5.8	6.8
United State	FEMALE	4.5	5.2	5.8	6.8
United State	FEMALE	4.5	5.2	5.8	6.8
United State	MALE	17.7	18.7	20.5	22.2
United State	MALE	17.7	18.7	20.5	22.2
United State	MALE	17.7	18.7	20.5	22.2
United State	MALE	17.7	18.7	20.5	22.2

The data is the same for a specific country and specified sex. This is seen in iterations of four as in rows 1-4 (excluding the title row): the data is uniform.

For women and men in Australia, the rates of suicide decreased from 2000 to 2005 and increased from 2005 to 2015.

For women in Canada, the rates of suicide increased steadily from 2000 to 2015 with a smaller increase from 2005 to 2010.

For men in Canada, the rates of suicide decreased slightly from 2000 to 2010 and then increased greatly from 2010 to 2015.

For men and women in the USA, the rates of suicide increased at a high rate (relative to other countries) from 2000 to 2015.

Overall, men have a rate of suicide that is three to four times higher than women. Relatively, the three countries have similar levels of suicide in both men and women in the years 2000-2015.

· - Data Calculations & Inferences -

Correlation calculated from Power BI quick measure function.

```
1  Correlation_Alcohol_Suicide =
2  VAR FilteredTable =
3      ADDCOLUMNS(
4          SUMMARIZE(
5              'transformed_data_for_visualization',
6              'transformed_data_for_visualization'[GeoAreaName],
7              'transformed_data_for_visualization'[Year],
8              'transformed_data_for_visualization'[Sex]
9          ),
10         "X", [Alcohol_Consumption_Measure],
11         "Y", [Suicide_Rate_Measure]
12     )                                                    RETURN
13 VAR FilteredTableNonNull =                                   IF(
14     FILTER(FilteredTable, NOT(ISBLANK([X]) || ISBLANK([Y])))     N > 1,
15                                                                  DIVIDE(
16 VAR N = COUNTROWS(FilteredTableNonNull)                              (N * Sum_XY - Sum_X * Sum_Y),
17 VAR Sum_X = SUMX(FilteredTableNonNull, [X])                          SQRT((N * Sum_X2 - Sum_X^2) * (N * Sum_Y2 - Sum_Y^2))
18 VAR Sum_Y = SUMX(FilteredTableNonNull, [Y])                      ),
19 VAR Sum_XY = SUMX(FilteredTableNonNull, [X] * [Y])               BLANK()
20 VAR Sum_X2 = SUMX(FilteredTableNonNull, [X]^2)               )
21 VAR Sum_Y2 = SUMX(FilteredTableNonNull, [Y]^2)
22
```

Australia-

Alcohol Consumption has a negative correlation with both Suicide Deaths (-0.72) and Suicide

Rate (-0.68), indicating an inverse relationship.

Poison Mortality Rate shows a strong negative correlation with Suicide Deaths (-0.84).

Canada-

Alcohol Consumption has a positive correlation with Suicide Deaths (0.58), suggesting a direct

relationship.

Poison Mortality Rate shows a weaker, slightly negative correlation with both Suicide Deaths

(-0.23) and Suicide Rate (-0.18).

USA-

Alcohol Consumption shows a strong positive correlation with Poison Mortality Rate (0.90),

Suicide Deaths (0.94), and Suicide Rate (0.94), indicating a robust positive association.

Poison Mortality Rate has strong positive correlations with Suicide Deaths (0.96) and Suicide Rate (0.96).

These inconsistencies in the data suggest that the dataset may not cover a sufficient time span for a comprehensive analysis. However, there are relatively strong correlations in both Australia and the USA. However, in these statistics opposite correlations for the same variables are shown. This could be due to the differences in socioeconomic factors of countries.

3. Data Preparation

Document the steps you took to clean, transform, and prepare the data for analysis. This may include removing duplicates, handling missing values, and creating new variables that will be useful for the dashboard.

Key Questions to Address:

· - What data cleaning processes did you perform?
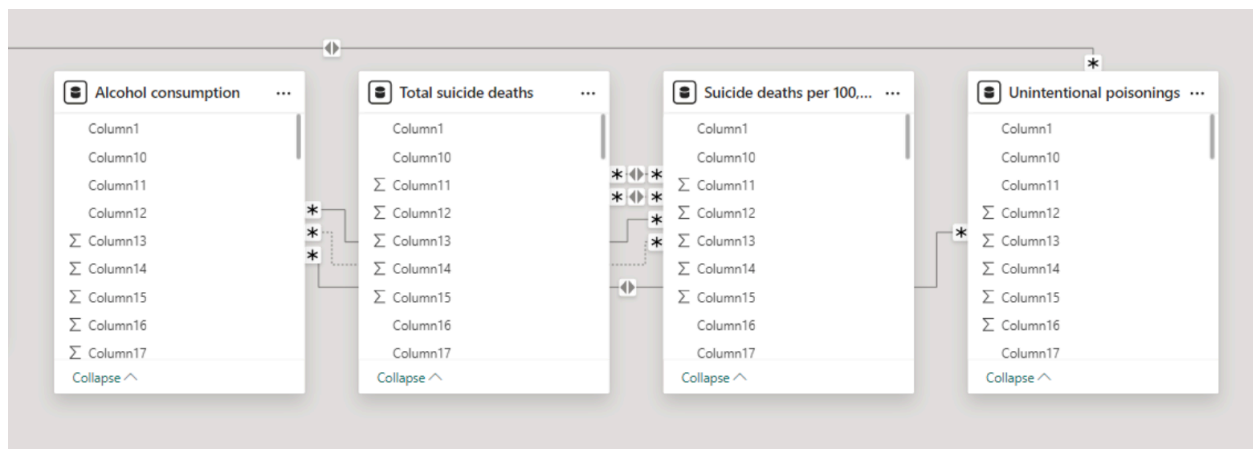
First, the datasets from the UN statistics database, SH_ALC_CONSPT.xlsx,

SH_STA_POISN.xlsx, SH_STA_SCIDE.xlsx, and SH_STA_SCIDEN.xlsx, were imported from excel format, into Power BI and all null columns were removed.

Second, the background information in every data set is not successful as data points were removed. These were columns, Goal, Target, Indicator, Series Code, Reporting, Series Description, Age, Observation, and Units. This information is better used and understood when correctly formatted in the dashboard, than as data points.

Third, I removed the column GeoAreaCode. GeoAreaCode is not a beneficial way of understanding the location of the data since only three countries are focused on within the dashboard. Using country names is much more successful.

Lastly, I merged the data sets by Country and Sex, using the power query merge function. This created a comprehensive table, organized by years, that included alcohol consumption, suicide mortality, and poisoning mortality. After the first two rows of Sex and Country, each

variable had its own column for a specific year; for example, 2005_alc.
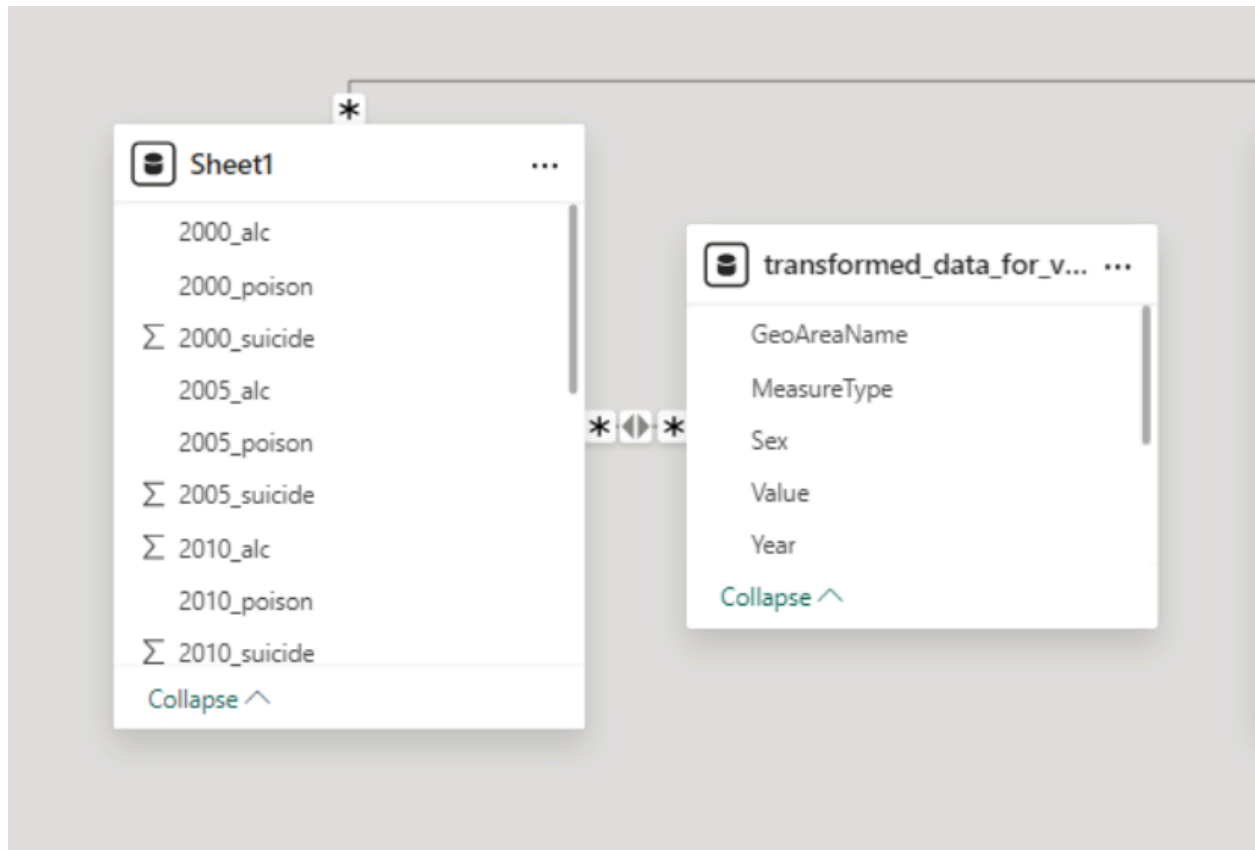
· - How did you handle missing values?

There were a considerable amount of missing values for the year 2019 seen in parts of the data sets. Valuing the accuracy of the analysis, it was important to focus on the years 2000 to 2015 specifically. This would create a more accurate report; an original purpose of the dashboard.

· - Did you create any new variables or features?

```
PercentChange_Alc_2000_2005 = ([2005_alc] - [2000_alc]) / [2000_alc] * 100
```

Using Dax new columns were created like this, shown above, for every year. This was done to illustrate the percentage change in alcohol consumption, poisoning mortality, and suicide mortality for all years.

4. Modeling

Explain any models or algorithms you used to analyze the data. If your dashboard includes predictive elements, describe the models and how they were trained. If not, explain how you structured the data to create meaningful visualizations.

Key Questions to Address:

· - What models or algorithms did you use?

My two data sets were connected by sex. To begin, I decided to not use the data mortality rate attributed to unintentional poisonings. This data's quality issues were not effective in expressing changes throughout the years, and differences between countries. This specific cause of mortality was unable to be expressed and therefore, its correlation with alcohol consumption was insignificant.

Due to this fact, the data is used to visualize the alcohol consumption rates, the suicide rates, the suicide deaths, and how they differed between countries over time and between sexes.

· - How did you ensure the model's accuracy?

```
Alcohol_Consumption_Measure = CALCULATE(SUM('transformed_data_for_visualization'[Value]),
'transformed_data_for_visualization'[MeasureType] = "Alcohol Consumption")
```

This measure was used in my second data set to stop Power BI from incorrect aggregation of my data. This was applied to the suicide and poisoning data as well. This was used to make sure that Power BI accurately used the data, displaying only the data under each variable.

· - How did you structure the data for visualization?

This data set was unsuccessful in creating some visualizations. Specifically, when attempting to create a basic Line Chart, showing the change over time was very difficult. This was due to the fact the current data set didn't have a specific year variable. Due to this fact, I decided to create an alternate data set to illustrate my data over time. I did this by first creating a duplicate data set, then selecting the columns included for all years, and then unpivoting the data. This created a unique data set, more successful in showing specific visualizations.

5. Evaluation

Evaluate the results of your modeling or visualization efforts. Discuss whether the dashboard meets the original objectives set out in the business understanding phase. Identify any limitations and how they might impact the dashboard's effectiveness.

Key Questions to Address:

· - Does the dashboard meet the business objectives?

- Trends in alcohol consumption over time and how these trends relate to mortality rates.

I visualized how alcohol consumption changed over time in each country in my first slide. I showed a line chart visualizing alcohol consumption over time. In my second and third slides, I compare alcohol consumption with mortality from suicide in each country.

Findings- Alcohol consumption largely increased throughout the years and no connections were able to be drawn from specific causes of mortality.

- Specific causes of death that exhibit the greatest sensitivity from alcohol consumption.

I focused on the USA and Australia where suicide rate and mortality from accidental poisonings had the highest correlations. I found that the suicide rate has the greatest sensitivity from alcohol consumption and that specifically in the USA alcohol consumption was found to increase with suicide rates.

- Gender-specific patterns in alcohol-related mortality to support targeted public health strategies.

Women largely do not consume as much alcohol or commit suicide as much as men. However, women are much more likely to die from unintentional poisonings. Stronger public health awareness of this would help reduce these deaths. When it comes to men, it is essential to advocate for responsible drinking.

Business Objective: The purpose of this dashboard is to support advocacy for stronger policy reforms.

I believe this dashboard was successful in supporting the advocacy for stronger policy reforms. This is because the dashboard was successful in visualizing the effects of alcohol consumption

on suicide in America. By illustrating this connection, it is clear to see that the problem lies within the consumption of alcohol. Through stronger control of alcohol consumption, suicide mortality can be reduced.

· - What are the limitations of your analysis?

1. Data limitations-

Each country had a very different correlation between alcohol consumption and the specific causes of mortality. Due to this fact, no overarching similarities or conclusions from the data could be drawn. Not over an extended period of time, only had data in the years 2000 to 2015, and only three countries. By using more data such as increasing the number of countries and mortality variables, it would be possible to draw stronger conclusions about the consumption of alcohol and affected mortality rates.

2. Lack of contextualization

While I performed an analysis of alcohol consumption in these countries, it is not clear why alcohol consumption is so important in measuring mortality values, or understanding how it directly affects these values. Through an increased understanding of this context, a stronger case could be made regarding the influence of alcohol consumption on these variables, and the importance of reform.

3. Causation vs Correlation

A stronger context would allow more connections to be made between alcohol consumption and causes of mortality. The analysis focuses on variables that are not directly related. For example, the data is not on suicides attributed to alcohol consumption.

4. Too large of an area

The USA, Canada, and Australia are massive countries with a diverse range of inhabitants. The drawn conclusions are an underfitting summarization of what is actually going on in these countries. A stronger analysis could be conducted by focusing on specific communities and could reveal important insights.

5. Time gaps in data

Data only exists in iterations of five years. This is a large amount of time as all variables analyzed in this dashboard can greatly change within this time frame. Stronger understanding and forecasting could be achieved with more data.

· - How could the dashboard be improved?

1. More variables

The dashboard could be improved through the use of longitudinal studies, and more variables. This could be done through the use of studies that follow populations with different alcohol consumption. This study would be very difficult to measure, but it would create insight into what specifically increased alcohol consumption can cause.

2. Contextualization

Also, alcohol consumption does not lead to mortality a large part of the time. To measure alcohol's effect on health, more statistics would be required to measure variables like the quality of life. These measurements would be more successful in understanding the diverse effects alcohol has on health, social, and economic factors.

3. Correlation

With the purpose of this dashboard in mind, researching a specific form of mortality that alcohol consumption directly affects would be most useful. While these forms of mortality can increase as alcohol consumption increases, focusing directly on a form of mortality that is directly impacted by alcohol consumption would lead to a successful implementation of the question.

4. Interactive Features

Using forecasting, the specific growth between years could be measured without the introduction of new data. Also, it would be more successful if able to focus on specific regions of these large countries.

5. Countries with different regulations on alcohol

By identifying and completing the analysis in countries with different reform policies, the connections between specific policies and the results of alcohol consumption and correlated deaths could be determined.

6. Quality of life

In many cases, while increased alcohol consumption does not lead directly to death, it is clear of its impact on humans. Through data measuring happiness, health, and relationships, the more subliminal impacts of alcohol consumption could be shown.

7. Drug comparison

To illustrate the influence of alcohol, it would be useful to compare it to things like other drugs or health issues. Through these comparisons, it would be easier to draw the value of alcohol consumption.

6. Deployment

Outline the steps required to deploy the dashboard for use. This may include publishing it to a platform like Power BI, sharing it with stakeholders, and ensuring it is regularly updated with new data.

Key Questions to Address:

·- How will you deploy the dashboard?

Dashboard-

On my first slide, I chose to introduce the overview and key metrics. This was seen as the average alcohol consumption, the sum of suicide deaths, and average unintentional poisoning deaths, as well as the alcohol consumption median and mode. Because the mean is less than the median, which is less than the mode. shows that the data is skewed left and there are outliers with very small values. These are initial observations that I made, shown again through these statistics. These were chosen and displayed on the first page to introduce the variables I would be analyzing in the rest of the dashboard, specifically alcohol consumption. Additionally, other observations I made initially showed that female consumption and deaths were much lower than their male counterparts. Australia has the highest alcohol consumption values, followed by Canada, and then the United States. Surprisingly, the ranking of countries when it comes to suicide mortality is in the opposite order.

I created slicers to illustrate this change between countries, years, and gender. These slicers will be available on every slide in my presentation. This is due to the constant need to compare countries and these statistics between variables. Having these slicers on every slide makes it much easier for the viewer to quickly analyze based on curiosity. The viewer can take their time

seeing how these different visuals change in understanding some basic relationships between the variables. The line chart comparing suicide rate and alcohol consumption first introduces the focus of the correlation between these variables, which will be the focus of the dashboard. Overall, the first slide introduces the variables, showing some initial insights to be further explored in the following slides. I wanted to first focus on alcohol consumption, as part of the business objective of the dashboard, because I want to illustrate how alcohol consumption causes increased suicide rates.
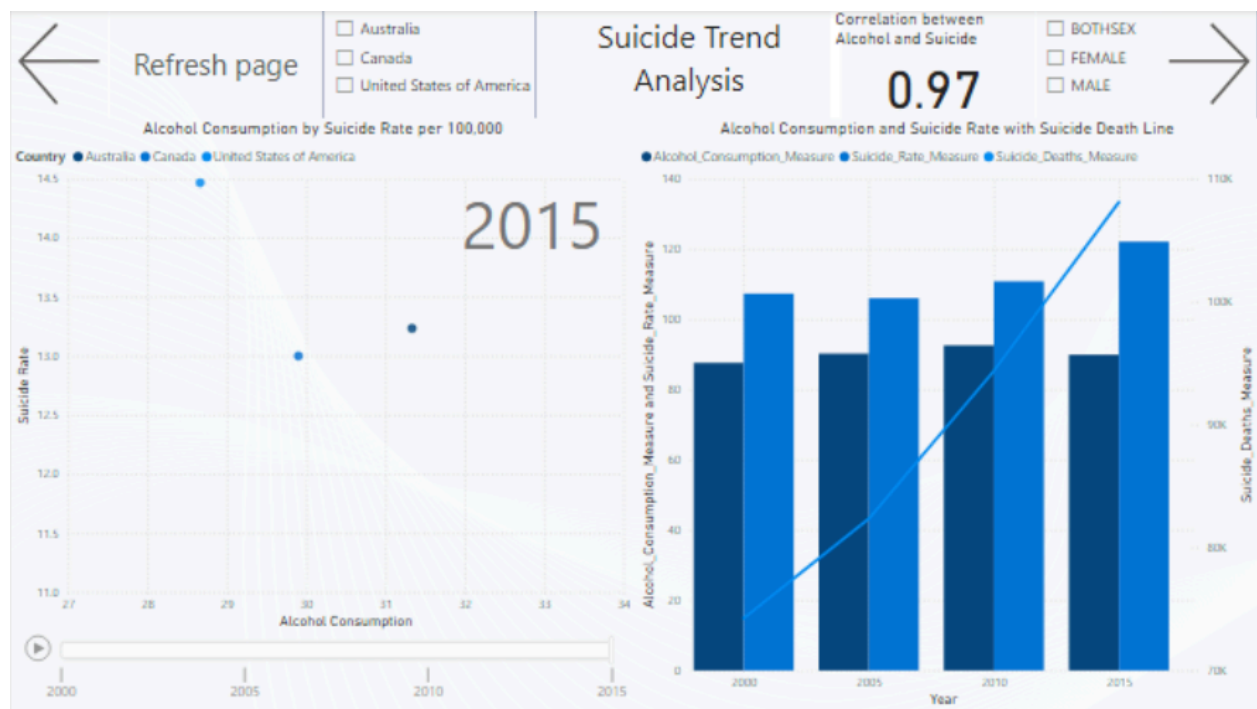
On my second slide, after a focus on alcohol consumption and an introduction to other variables, I wanted to focus on the correlation between suicide and alcohol consumption. This was first seen in a correlation chart comparing alcohol consumption and suicide rate. A play axis over time was used to illustrate the correlation between these variables over the years. Through the play axis, the consistencies in the data can be seen, as well as similarities between years

between countries and sexes. The stacked column chart comparing suicide rate and alcohol

consumption with a suicide death line illustrates another comparison of variables. Due to the

different scaling of data comparing suicide and alcohol consumption, I chose this visualization as

it best illustrates how a slight increase in alcohol consumption can have a devastating effect on

the suicide rate. I added a card visualization to highlight the specific correlation coefficient. This

statistic is essential in giving an overarching statistic comparing the visuals. Again, my initial

observations are shown here with the same values as calculated before. The USA has a strong

positive correlation, Canada has a weak correlation, and Australia has a strong negative

correlation. The purpose of this slide is to show how alcohol consumption correlates with suicide

rates in each country. Through the use of visualizations, and correlation coefficient card, this

dashboard has directly connected alcohol consumption with suicide mortality. I aim to represent

a call to action for my business objective in the final slide.
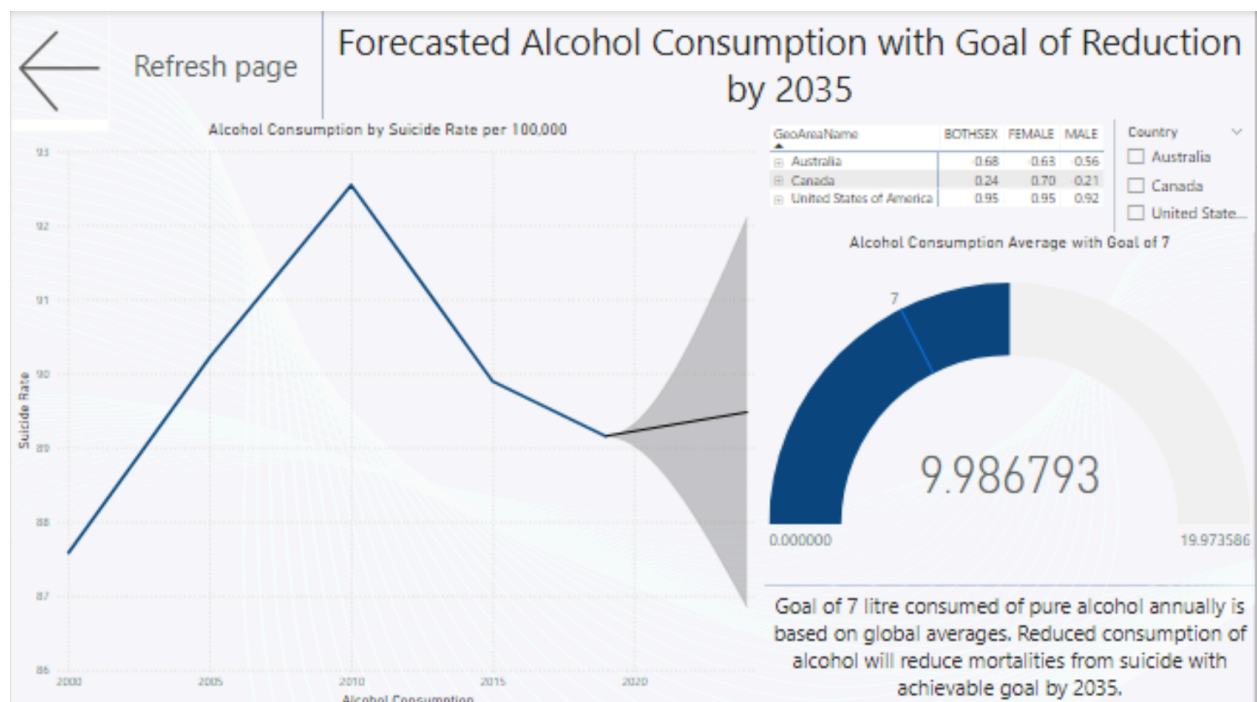
In my final slide, I wanted to focus on the future and bring closure to my business objective. I created a line chart with a forecasting line to predict suicide rates and alcohol consumption in the future. Based on Our World in Data, the global average for alcohol consumption is seven. I set the goal of alcohol consumption for these three countries to seven as a way of reducing the suicide rate to the global average in the next 10 years. Not only is this an achievable goal, but with the aim of the global average, setting the goal on alcohol consumption illuminates the importance of reform on the drug. Unfortunately, as shown in the visual, alcohol consumption will likely continue to increase in these countries. I believe this is a strong final slide indicating the importance and goal of this dashboard. I first introduced, compared, and correlated these variables to illustrate alcohol consumption as the focus, and finally set an achievable goal for these countries, and others to focus on.

· - Who is the target audience for the dashboard?

The target of this dashboard is policymakers. The goal of this dashboard is to call for political reform on alcohol consumption. This is done through the visualization of alcohol's effects.

For these policymakers to make this change, this dashboard should be directed toward advocacy groups, the general public to spread this information, as well as public health organizations, researchers, and academics to further the evidence to support these claims.

· - How will you ensure the dashboard stays up to date?

To ensure this dashboard stays up to date, scheduled data imports from the SDG database would be useful. Every 5 years the SDG contributes to the databases this dashboard uses. By updating these databases, the dashboard is ensured to stay up-to-date and relevant.

Additionally, if possible, it would be beneficial to connect to APIs that provide real-time alcohol data showing the death count. This would be a powerful way for the dashboard to stay relevant.

7. Future Research

List down the steps that might address the shortcomings in your research. These could be the availability of data, or outdated research data.

Key Questions to Address:

I addressed a lot of the shortcomings and future research under the evaluation section of my template specifically questions: "What are the limitations of your analysis?" and "How could the dashboard be improved? "

Who is the target audience for the dashboard?

The target audience for this dashboard is policymakers to advocate for stronger policy reform regarding alcohol consumption across the world.

· Are there emerging techniques or tools that could provide deeper insights?

The presence of longitudinal studies on alcohol consumption could provide vital insights connecting alcohol with deteriorated health, and quality of life. The presence of these studies could provide necessary data that is currently lacking.

Additionally, AI-based data mining tools for detecting subtle patterns in health and alcohol-related datasets would be useful in displaying the correlation between alcohol consumption and some of these variables.

More complex healthcare services will be better at measuring and regulating safe alcohol consumption, perhaps even substitutions.

· How might the research impact different stakeholders or communities?

1. Policy Makers

Provide reasoning for enacting stricter alcohol policies. Also, brings attention to the importance and study of these variables.

2. Healthcare Systems

Highlight areas needing more mental health and substance abuse resources. Introducing new areas of focus.

3. Alcohol Producers and Retailers

Encourage adopting responsible sales practices to mitigate societal harm. Understanding effects on communities and the importance of safer alcohol sales.

4. Communities.

Empowering communities to advocate for local change and importance to loved ones. Spread of data-driven insights will have an impact on how communities view alcohol, creating more aware, safer communities.

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