

Assignment Data Storytelling

Meat transactions

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Deadline: 2023-05-30

1. General information

Report link:

https://app.powerbi.com/links/khB6Msd50p?ctid=575945ce-2ee0-4503-ba90-6fb4a03b8c30&pb_i_source=linkShare

a) What is the data storytelling (communication impact) you are attempting to deliver via this report/dashboard?

My data storytelling focuses on presenting insights and recommendations to the board of directors, highlighting strategies for **maximizing revenue** while **reducing toxic imports**.

I emphasize the importance of ensuring the safety of products destined for human use to increase customer approval, sales, and profit.

Additionally, long-term strategic growth through branding and guided investments is highlighted, considering a timeline of 365 days and data from 20 countries.

Role: Market researcher.	Audience: The board of directors.	Target: Maximize revenue while reducing toxic imports.
Why: Ensure the safety of products destined for human use. This will increase customer approval, sales, and profit.	How: Focus on strategic growth by developing initiatives to help the business grow long-term through branding and guided investments.	Timeline and scope: 365 days for 20 countries.

b) Explain how you have structured your report/dashboard in order to deliver that impact.

1. Created DIM-Table and a FACT-table:

I created the following tables beside the original datasets.

Created a **'DimMeat'** table by copying an existing table and removing all columns except 'Meat Type', 'Meat Price' and 'Toxicity', because these columns have the same values across all rows in all tables.

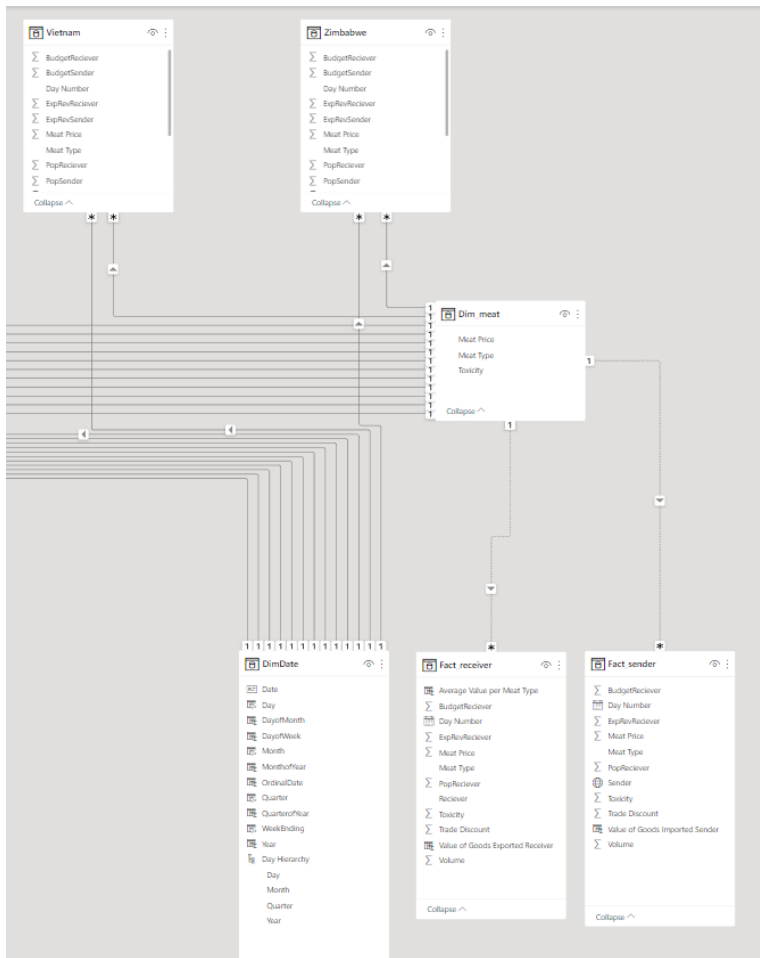
Created a **'DimDate'** table. Connected to the 'Day Number' property in all tables. There are 365 days, so it's one year. From this, I created a date hierarchy. The assignment didn't specify which year, so I assumed 2022. I created the DimDate table with the below code:

```
DimDate = CALENDAR (DATE (2022, 1, 1), DATE (2022, 12, 31))
```

I created two tables to reflect the quantitative data for import and export. One is **'Fact_sender'**, and one is **'Fact_receiver'**. The DAX code to create these is the same except that in one table it says 'sender' while in the other it says 'receiver'. For this, I did a summarization of the columns 'Day Number', 'Receiver', 'PopReceiver', 'BudgetReceiver', 'ExpRevReceiver', 'Meat Type', 'Meat Price', 'Toxicity', 'Trade Discount' and 'Volume' for every country and then combined all countries with a UNION operation.

```
Fact_receiver =  
UNION(  
    SUMMARIZECOLUMNS(  
        Bulgaria[Day Number], Bulgaria[Receiver], Bulgaria[PopReceiver],  
        Bulgaria[BudgetReceiver], Bulgaria[ExpRevReceiver], Bulgaria[Meat  
        Type], Bulgaria[Meat Price], Bulgaria[Toxicity], Bulgaria[Trade  
        Discount], Bulgaria[Volume]  
    ),  
    (...all other countries...)  
    SUMMARIZECOLUMNS(  
        Zimbabwe[Day Number],  
        Zimbabwe[Receiver],Zimbabwe[PopReceiver],Zimbabwe[BudgetReceiver],  
        Zimbabwe[ExpRevReceiver], Zimbabwe[Meat Type], Zimbabwe[Meat Price],  
        Zimbabwe[Toxicity], Zimbabwe[Trade Discount], Zimbabwe[Volume]  
    )  
)
```


2. Connect the tables:



The '**DimDate**' table is connected to all other source tables by the Date (many to one). And to the two Fact tables (one to many).

The '**Dim meat**' table is connected to all other tables by the Meat Type property (many to one).

The two fact tables are connected to the '**DimMeat**' table and the '**DimDate**' table.

3. Created visualizations:

- Created **more than six different types of visualisations**.
- On **more than two separate sheets**.

Sheet 0:

Decomposition Tree.

Funnel.

Area Chart.

Stacked Column Chart.

Card.

Sheet 1:

Two clustered column charts.

Two tables.

A multi-row-card.

Card.

Sheet 2:

Key influencers.

Two cards.

Matrix.

Radar chart.

4. Implemented DAX columns:

- Implemented 4 different **DAX columns**.
 - i. Value of Goods Exported Receiver = `[Volume] * [Meat Price]`

- ii. Value of Goods Imported Sender = [Volume] * [Meat Price]
- iii. Average Value per Meat Type = `CALCULATE(AVERAGE([Value of Goods Exported Receiver]), ALLEXCEPT(Fact_receiver, Fact_receiver[Meat Type]))`
- iv. Average Value per Meat Type = `CALCULATE(AVERAGE([Value of Goods Imported Sender]), ALLEXCEPT(Fact_sender, Fact_sender[Meat Type]))`

5. Implemented DAX measures:

Implemented an avg meat toxicity measure:

```
Avg Toxicity Level = AVERAGE(Dim_meat[Toxicity])
```

And correlation between meat toxicity and sales value

```
Avg Sales Volume by Toxicity =  
AVERAGEX(  
VALUES(Fact_sender[Toxicity]),  
CALCULATE(SUM(Fact_sender[Volume]))  
)
```

6. Answered and visualised the lowest and highest volumes:

See report page 2.

7. Answered and visualize the least meat shipped corresponding to the least value of goods exported:

See report page 3.

c) Explain each of your visualizations:

Why did you choose that way to visualise and communicate the information? How did you plan for that visualisation to support and help deliver the dashboard's overall impact?

Sheet 0:

Decomposition Tree: To display how toxicity is correlated with meat price. And which types of meat have toxicity and price.

Funnel: Shows a hierarchy between meat types. Here we compare the volumes exported/imported. This is to see which type of meat is sold most.

Area Chart: We see how sales fluctuate over time. We see when the most and least goods are exported.

Stacked Column Chart: An Overview of the toxicity. The highest bar has the highest toxicity.

Card: shows important numbers. Average toxicity for the meat selected. An average value for meat type.

Radar chart: another way to visualize which meat is toxic.

This report shows toxicity and meat type compared to sales. It highlights how much toxic meat we sell now.

Sheet 1:

Two clustered column charts: overview of volume summed up by receiver and sender. To see who imports and exports the most.

Two tables: Showing receiver and the sum of column, and also the sender and sum of volume. Coloured as a heat map.

A multi-row-card: Showing sum of volume for both sender and receiver.

Card: Average sales volume by toxicity.

This report card is a bit simpler. It only wants to compare the volume of the sender and receiver to see which countries are top or bottom.

Sheet 2:

Two cards: showing date and sum of volume. Overview of the most important KPI's.

Matrix: to filter and select the data we want.

This report card answers which day the lowest and highest sales were done and when the average value per meat was highest and lowest.

d) Why do you believe your technical analysis is correct, and what steps did you take to confirm your results?

I started over with this dataset three times, so I hope it's fine now. Honestly, it's confusing and messy. To confirm my results, I stayed with the original data for a long time before aggregating. I tried to keep things apart and separate the sender from the receiver. Once I summed and calculated measures I tested assumptions and got stuck a few times. Once with bad dates. Then I checked my schema and changed the model's primary/secondary keys.