War in Ukraine

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Attacks on Ukraine: The Dataset

- This dataset gives specifics on each attack that Russia has set on Ukraine since the start of the War. The data was cleaned in order to make the analysis even more specific.
- After cleaning the dataset, we are left with the following columns:
  - id - Primary key to identify each event
  - date - date of the attack in format mm/dd/yyyy
  - latitude & longitude - exact location of each attack
  - location - city or general area of attack
  - description - details of the attack
    - Note: this is not used in the analysis but is important if there is an outlier that we wanted specific information on
  - area affected - type of civilian area harmed
  - weapon used - specific weapon used on area

Attacks on Ukraine: The Dataset

- Data is from Kaggle Datasets
- Cleaning the data
  - Split column and took out excess words: area affected and weapon used were one column so we split them to be able to analyze both separately, there was also extra words to distinguish between the two now columns, which were also omitted for clarity.
  - Links to articles/sources were taken out: Originally there was a sources column which would not be helpful for the analysis
- Important Columns
  - id
  - date
  - latitude/longitude
  - area affected
  - weapon used

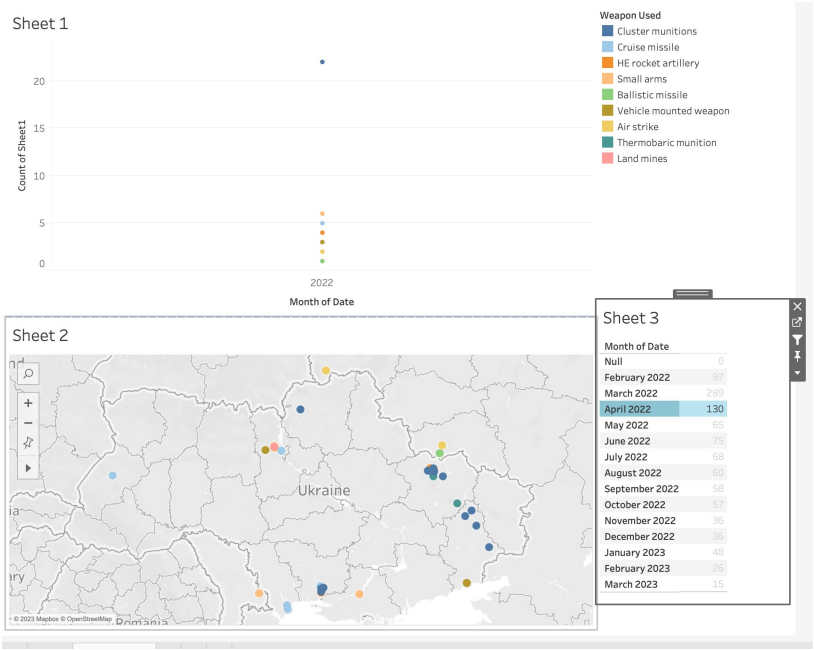
Question 1: How has the usage of weapons changed over the course of the War in Ukraine?

We created this question because we were curious if there were any significant times when weapon usage varied.

Importance:

This data is important because it helps us understand the relationship between where weapons were used in relation to battles that ensued. Were there random weapon attacks or were they concentrated around battle hotspots?

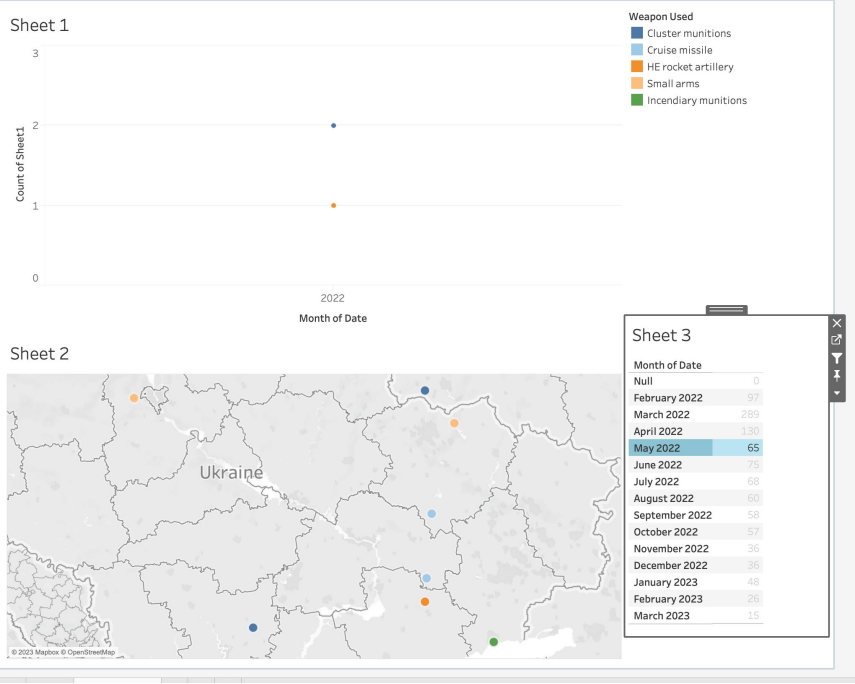
Analysis:



Here in sheet 1 we can see the weapons used and where they were used in april of 2022. Because there was a conflict over the capital at the time, it makes sense that there were weapons usage there. We also see weaponry used along the border which makes sense from the invasion locations.

The manipulations to these three sheets include color coding the weapon locations, color coding the weapons, and ordering sheet 1 by their count.

Analysis:



A month later in May 2022, we can see a drastically reduced amount of weapons used around the capital. Also the amount of cluster munitions has drastically reduced. This data makes sense considering around this time Russia withdrew troops from the capital.

The manipulations in these sheets are the same but the sheet 3 that is used to filter by months was changed to May to display the time change on sheets 1 and 2.

Interpretation:

This data is important in finding out what weapons are key to Russia's attack on Ukraine, and where those weapons are used. Russia has focused much of their attack in eastern Ukraine with weapons such as cluster munitions, air strikes, cruiser missiles, and thermobaric munitions. In May of 2022 we see a clear decrease in the number of attacks in Ukraine. This lines up precisely with the fact that Russia had withdrawn troops at that time. Attacks were much more spread out spatially than before.

Question 2: Where have the attacks been focused in Ukraine?

We created this question out of curiosity about the areas affected by the attacks. Our aim was to determine whether the attacks were targeted or sporadic and to identify the specific locations impacted.

Importance:

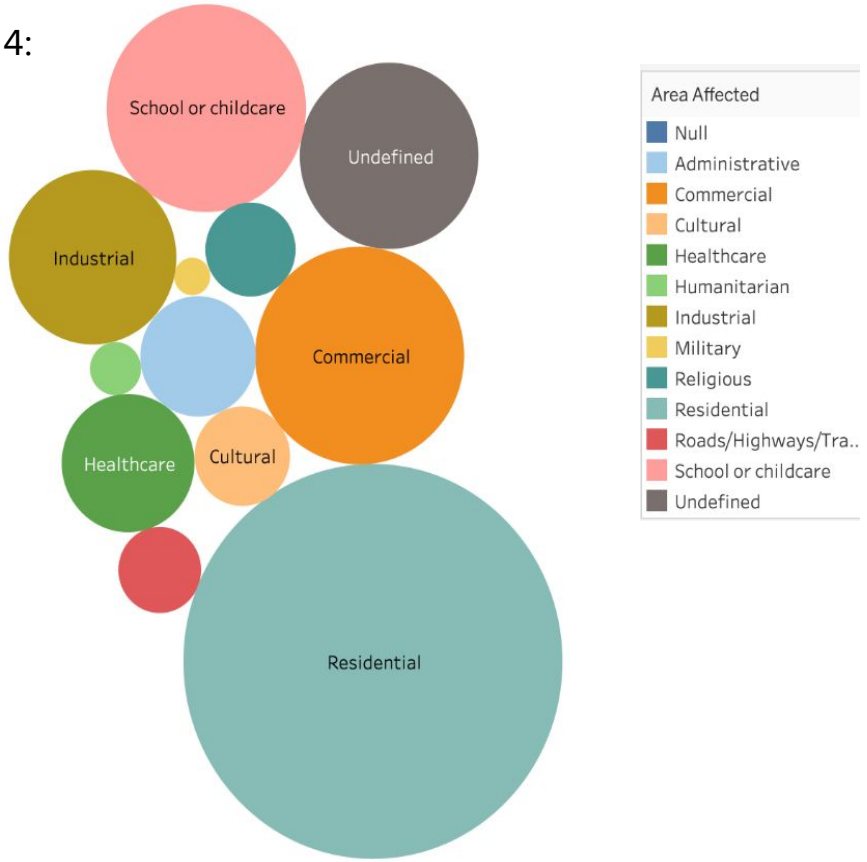
This is important because it helps us start to understand how many attacks were sent to these civilian locations as well as the specific areas of these attacks. It’s one thing to hear about these attacks but in order to truly understand the gravity of these attacks we believe that you need to be able to see the affected areas as well.

Analysis:

From Sheet 4 we can see that the three main areas affected were residential, school or childcare, and commercial areas.

The manipulations applied to sheet 4 were counting the total amount of each area affected and labeling and color coding each area. In order to understand the different number of attacks we utilized the packed bubbles graph.

Sheet 4:

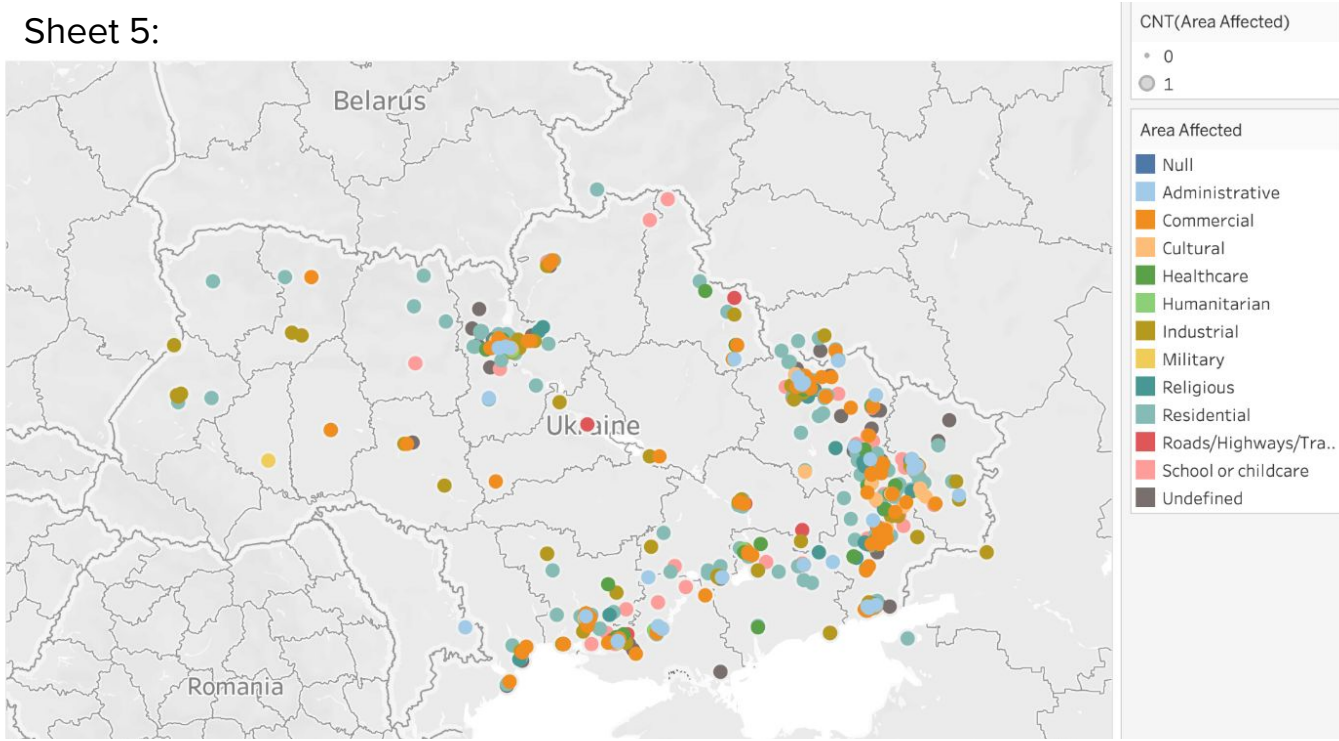


Analysis:

Utilizing sheet 4 we then created sheet 5 in order to try and understand the locations for the attacks. As we can see in sheet 5, a majority of the attacks are on the border of Ukraine and Russia.

The manipulations applied to sheet 5 were color coding the areas affected, counting the areas, and applying the map graph in order to visualize the attacked areas.

Sheet 5:



Interpretation:

Russia has seemed to develop a clear cut plan when it comes to choosing where to attack. These locations consist primarily of residential, commercial, industrial, and childcare facilities located in eastern and northern Ukraine. This makes sense when looking at sheet 5 and finding that Belarus, a Russian ally, borders northern Ukraine, and Russia borders eastern Ukraine.

Conclusion:

Russia has created a strategic plan to use its geographic location, as well as its ally's location to invade Ukraine. Russia has the plan to destroy the general infrastructure of the country by targeting its residential, childcare, and industrial zones. This was done by using a variety of weapons in certain concentrated areas.