Xin Tang

Oct/2024

Data Presentation and Visualization

DSC640-T301

**Week 7-8 assignment**

**Write Up**

**Story background:** from statistical aspect, guessing lottery winning number is a mission impossible. However, it does not hurt to see if there are any patterns that will help.

**Customer/Audience**: Targeted audience is general lottery player, who know how the lottery plays but not interested in any data comprehension.

**Purpose**: Conduct an analysis to show if there are any patterns the general players may want to know about.

**Method**: Power BI is the tool I have some experience with. I used ready to use visual chart inside power BI to create visual, then, import charts to PowerPoint to do report.

**Medium**: Since the audience is general population, The result will be presented in the form of **PowerPoint**.

**Design**: I want to make charts as simple as possible. I also place a sentence at the most visual place of the page to summarize the chart. I used font change and color change to draw audience attention.

**Visual**:

* Stacked Area chart: show number distribution on each draw of power ball.
* Tree-map: to see the most likely number drawn after a number is drawn.
* Small multiple: to show if any number are more frequently drawn.
* Histogram: to show which group of numbers are more likely to be drawn.
* Scatter chart: to check if there is any correlation between numbers pulled in 2 draws.
* Bubble chart: correlation between Mega ball number and Multiplier, with number drawn as bubbles.

**Ethical Consideration**:

* I checked the data, which is clean, so I did not need to remove/adjust anything. I used Excel to do some grouping since power BI is not strong in data transformation.
* My analysis serves the information only situation, like in a social media post, so I do not see any legal or ethical risk.
* I trusted the data since the data resource is from a government website.
* Before the analysis is posted to social media, I will add discriminator to protect myself.