VISUALIZATION

* **C**reate statistical graphics, plots & info graphics.
* **C**ommunicate Information clearly & efficiently.
* **P**ractice & experiment with plot types & options.
* **E**valuate & Incorporate feedback.

CHECKLIST

As per Alberto Cairo >> Visualization must be Truthful, Functional, Insightful, Beautiful & Enlightening. Remember to make it Clear, Accessible & Engaging for the user.***[1]***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Did you ensure the following:** | **Yes** | | **No** | |
| **Done** | **Partial** | **To-do** | **Ignore** |
| **Initial task >> Before the Visualization** | | | | |
| Did you perform EDA*[2]* and clean the datasets? |  |  |  |  |
| Are the datasets complete and factually accurate? |  |  |  |  |
| Did you identify the scenario, assumptions and challenges? |  |  |  |  |
| Did you identify the message (aka Problem statement)? |  |  |  |  |
| Did you think and look for more sources and confirmation? |  |  |  |  |
| **Intermediate task >> Select the Visualization** | | | | |
| Is the Visualization relevant and insightful? |  |  |  |  |
| Did you decide whether the visualization should provide 'spontaneous insights' or 'knowledge building insights'? |  |  |  |  |
| Does the visualization digress from the main message? |  |  |  |  |
| Did you choose the right category of plot? |  |  |  |  |
| Did you choose easier to read chart formats, such as boxplots, bar charts? |  |  |  |  |
| Will the target audience understand the plot? |  |  |  |  |
| Did you decide on how to measure the variables? |  |  |  |  |
| Do you plan to experiment with packages and plot types? |  |  |  |  |
| Did you consider human psychology when choosing the graphs, such as avoid area-based pie charts? |  |  |  |  |
| **Intermediate task >> During the Visualization** | | | | |
| Is the Title appropriate, and emphasize relevant information? |  |  |  |  |
| Does the Title show specifics, such as the timeline of study? |  |  |  |  |
| Is the font, color and size of the Title eye-catching? |  |  |  |  |
| Are Gridlines present when necessary? |  |  |  |  |
| Are the Axes labels clear and legible? |  |  |  |  |
| Are the Axes intervals uniform? Do they start at zero? |  |  |  |  |
| Are the Axes measurements easy to comprehend (eg: %)? |  |  |  |  |
| Is the chosen scale of appropriate precision? |  |  |  |  |
| Is there sufficient spacing between the elements? |  |  |  |  |
| Did you include legible and informative legend(s)? |  |  |  |  |
| Are appropriate labels/annotations provided? |  |  |  |  |
| Is the chart text readable, clear and concise? |  |  |  |  |
| Is the text relevant and hierarchical? |  |  |  |  |
| Did you use distinct markers to cleverly represent data? |  |  |  |  |
| Are the markers, symbols and annotations appropriate? |  |  |  |  |
| Is the color schema appropriate? |  |  |  |  |
| Did you choose mild/muted colors, avoiding bright colors? |  |  |  |  |
| Did you choose distinct colors to represent distinct data? |  |  |  |  |
| *Continued in Page 2..* | | | | |
| **Did you ensure the following:** | **Yes** | | **No** | |
| **Done** | **Partial** | **To-do** | **Done** |
| Is the color palette suitable for the color-blind (such as avoid red-green schema)? |  |  |  |  |
| Did you avoid unwanted usage of color, graphics and chartjunk? |  |  |  |  |
| Did you maintain good Data-to-ink ratio? |  |  |  |  |
| Are missing datapoints/Intervals clearly represented? |  |  |  |  |
| Will interactive features enhance the user understanding? |  |  |  |  |
| Do the annotations/markers emphasize the key elements? |  |  |  |  |
| Are comparable visualizations placed side-by-side with clear demarcations? |  |  |  |  |
| Is an appropriate common axis used for subplots? |  |  |  |  |
| **Final task >> After the Visualization** | | | | |
| Overall, is the chart simple and aesthetically pleasing? |  |  |  |  |
| Is it too complex/technical for the target audience (recheck!)? |  |  |  |  |
| Can the user easily decipher the message from the plot? |  |  |  |  |
| Are the key takeaways highlighted? |  |  |  |  |
| Is the plot appropriate, Insightful and relevant (recheck!)? |  |  |  |  |
| Does the plot need future improvements  (for example: with more data)? |  |  |  |  |
| Is the Insight or conclusion convincing enough? |  |  |  |  |

**Note:** Plot types and options are explained in the accompanying coding cheat sheet.

**Reference:**

* [1] <https://www.datarevelations.com/truthful-art.html>;
* The Truthful Art by Alberto Cairo;
* <https://news.nationalgeographic.com/2015/10/151016-data-points-alberto-cairo-interview/>

**Abbreviation:**

* [2] EDA stands for Exploratory Data Analysis