Visualization Design

Principles and Choices

In this document I explain the design choices, presenting screenshots to illustrate the decisions.

Dashboard Summary

Three main attributes were chosen to guide the visualization: safety, cost and size (vehicle and trunk). The dashboard presents an overview of Cost over the years of usage, considering the fuel cost. Here, the user have the first contact with the information, and will see the filtering options.

Then, the user will see the scatterplot. The more to the bottom-right the vehicle is, the more it matches to Sue priorities.

Finally, we present our conclusions and details of the top-2 vehicles we are recommending for her. We also guide her to take into consideration other details, such as Horsepower, comfort and design.

Choices based on the Persona needs

- **Highlight vehicles with score 5**: these are the top-priority of the user. By contrasting colors, setting the score 4 to light grey and score 5 to dark brown, we make use of pre-attentive brain's processing.

- **Ability to filter by score**: after having an overview of the data, the user may be interested in filter to visualize only score 5 and reduce even more the clutter.

- **Ability to set up parameters**: the user can set up two parameters: years and the proportion of km that the vehicle will be used in the city. This applies changes to the final results. The default is 50% for city usage (50% for highway). The default years of usage is set to 8, which is the average
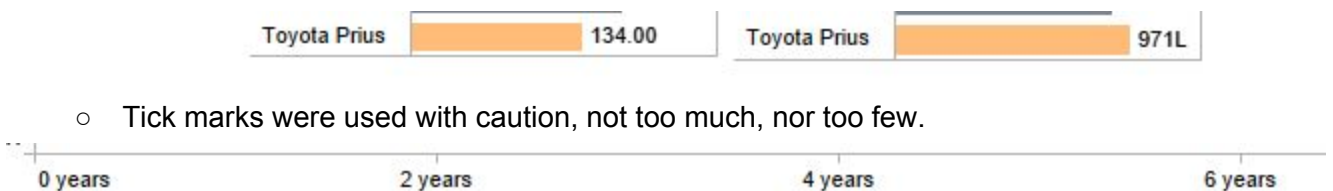
estimation calculated based on the maximum 250,000 km in the odometer. **This could change the decision made by analysing Total Cost.**

City usage %

1

○ < >

Years of Usage

9

○ < >

City Usage and *Years* is used to compute the *Total Cost*, the price of the car plus the fuel cost at **$1.45** per liter.

- **Reduced visual clutter**: clutter was reduced when possible.
  - Axis were omitted when unnecessary. For instance, text were added to bar-plots to let the value clear and the comparison accurate.

| Toyota Prius | | 134.00 | | Toyota Prius | | 971L |

- Tick marks were used with caution, not too much, nor too few.

| 0 years | 2 years | 4 years | 6 years |

- **Similarity principle to show size of vehicle**: two different symbols were used to indicate medium and big vehicles, below and above the average size. The size of symbols reinforces vehicle size.

Kia Soul EX

Toyota Matrix   Nissan Rogue Mazda   Kia Rondo
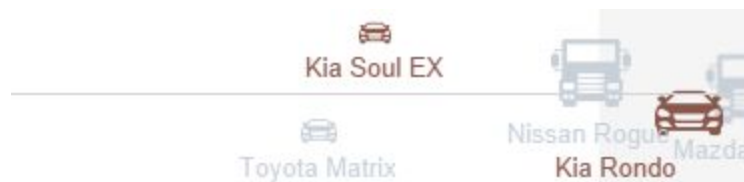
- **Enclosure to group vehicles**: the principle of enclosure were used to group the cars with the biggest Cargo Volume. This is represented by a shadow to the right of the Average Cargo Volume reference line. A reference line for Average Total Cost was also added.

Toyota Prius
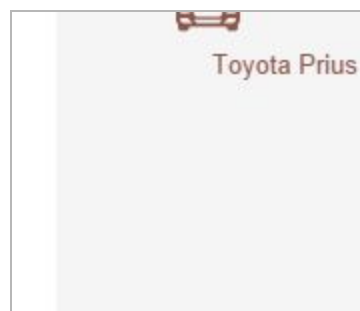
- **Different pattern for different information**: when the dashboard introduces details about the two recommended vehicles, it expresses the two in colors not used before. The colors were chosen so that the user will not map the small bar plots with the Score-4/5 colors. The new colors represent 2 vehicles.

- **Highlight, selection tooltips**: the user can highlight and select elements to see detail on demand, including the vehicle picture. This contextualize better, and help with mindmap.
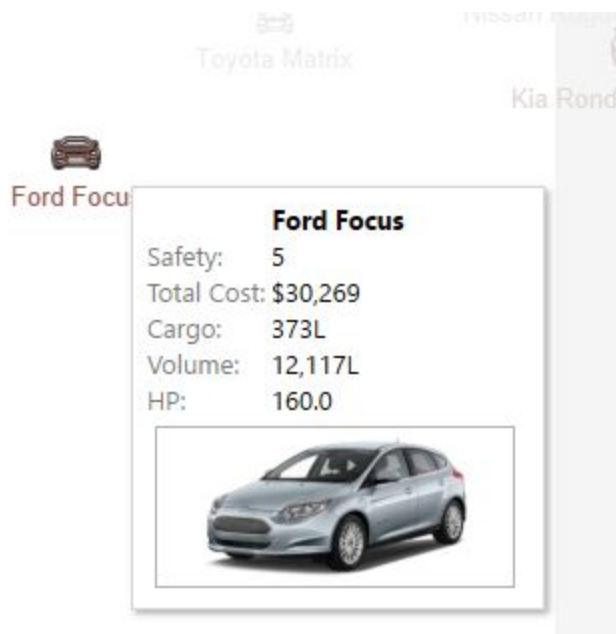
- **Text**:
  - A text box with conclusions is provided. The user can read after the meeting to review our suggestions and logic of analysis.
  - Texts are placed on plots to give context and information.

- **Contact information**: at the end of the page, an e-mail address is provided in case of the user needs to contact the responsible for the visualization after the meeting.