Tool: Data Summary and Visualizations Guide

Visualization and Analysis

Instructions:
Use the table below to decide which summaries and graphs are appropriate and useful when summarizing and visualizing different types of variables.

<table>
<thead>
<tr>
<th>Randomness</th>
<th>Variable type</th>
<th>Summary type(s)</th>
<th>Visualization(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Categorical</td>
<td>• frequency table • relative frequency table • proportion</td>
<td>bar chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pie chart</td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
<td>• mean • median • max • standard deviation • range • IQR • five number summary</td>
<td>dot plot</td>
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<td></td>
<td></td>
<td></td>
<td>histogram</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>box and whisker plot</td>
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<tr>
<td></td>
<td>Categorical vs. Categorical</td>
<td>• two-way table • difference in proportions</td>
<td>side-by-side bar chart</td>
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<tr>
<td></td>
<td></td>
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<td>stacked bar chart</td>
</tr>
<tr>
<td></td>
<td>Categorical vs. Quantitative</td>
<td>• statistics by group • difference in means</td>
<td>side-by-side box and whisker plots</td>
</tr>
<tr>
<td></td>
<td>Quantitative vs. Quantitative</td>
<td>• correlation</td>
<td>scatterplot</td>
</tr>
</tbody>
</table>