



Statistical Graphics:

Designing Pie Charts

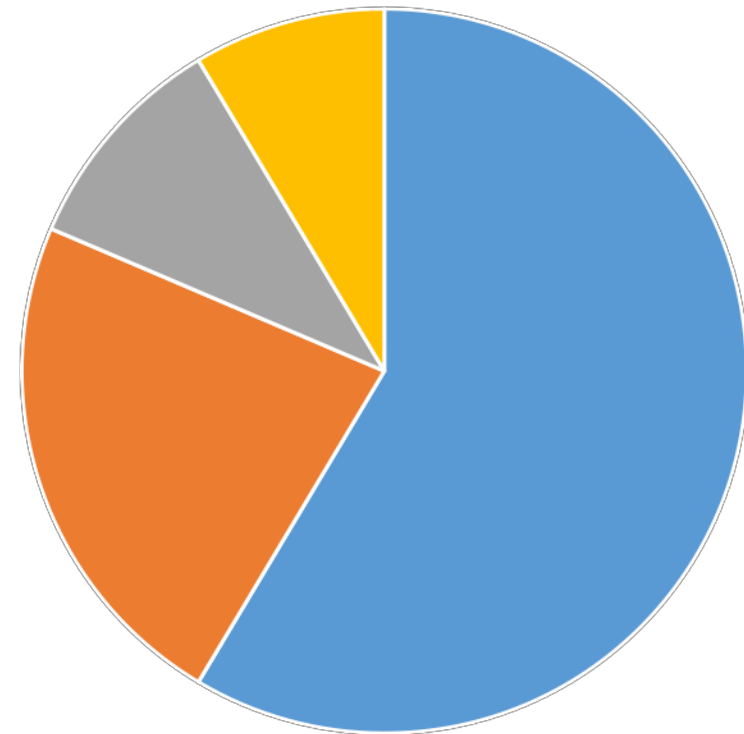
When to Use a Pie Chart

| Categorical data

- Each slice can represent a different category

| How many categories do you have?

- Good rule of thumb is ~7 categories maximum



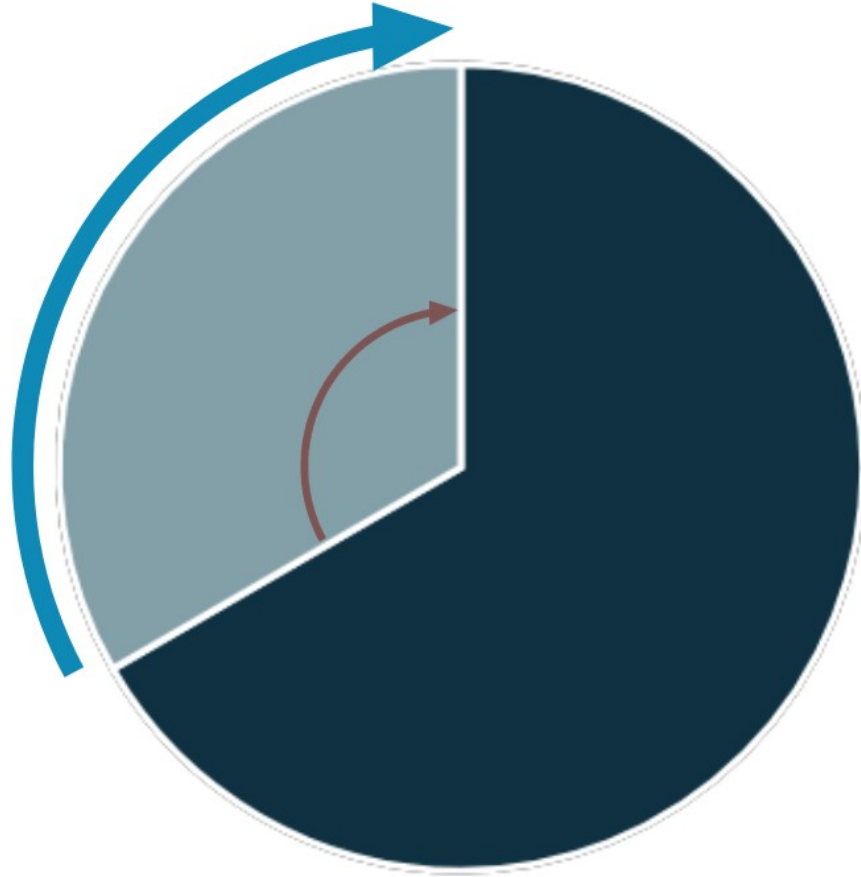
■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

Pie Charts

Use:

- Angle
- Area
- Arc Length

to encode values



Interpreting Pie Charts

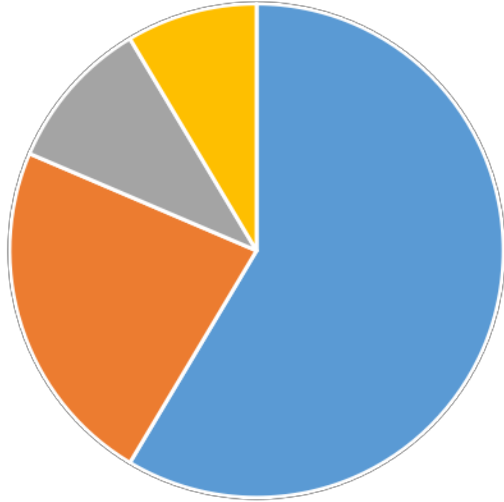


| Pie charts lead to an **overestimation** of small values and **underestimation** of large ones.

| Perceptual research shows that error is high when estimating values.

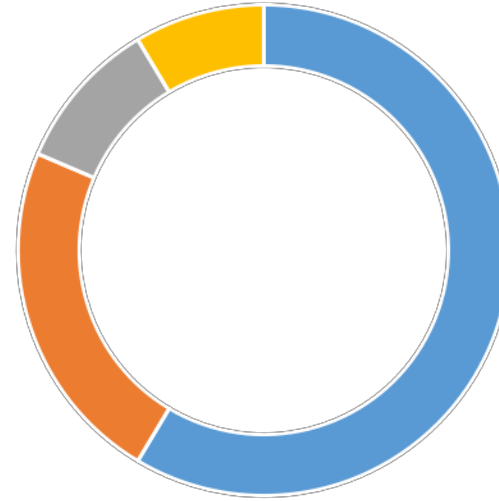
| Pie charts should be presented with values as pie slice labels.

Visual Variables



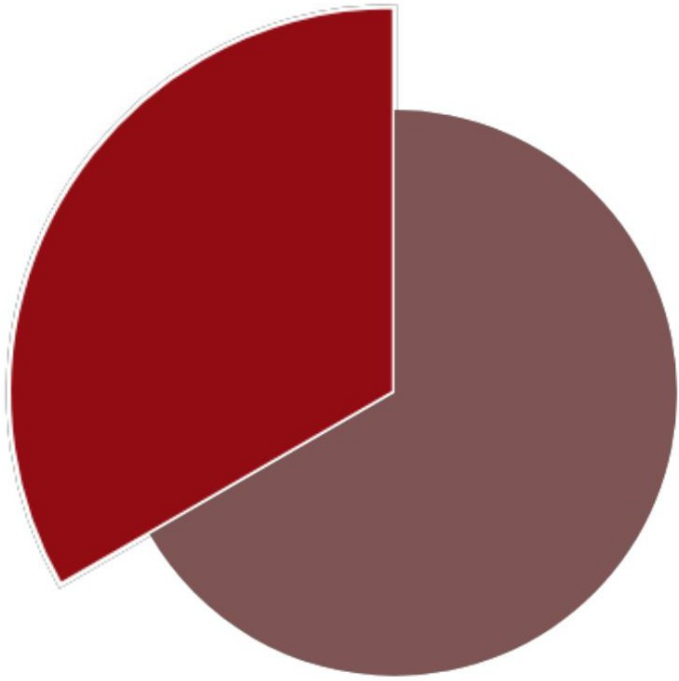
| Angle is not a key visual clue

| Arc Length and Area are important

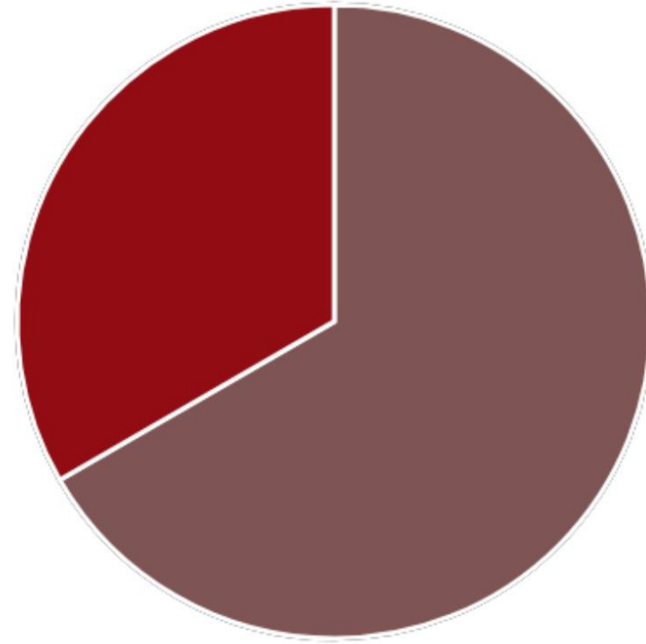


| Doughnut charts are just as effective

Interpreting Pie Chart Variants



Larger Slice



Exploded Pie