Statistical Graphics:
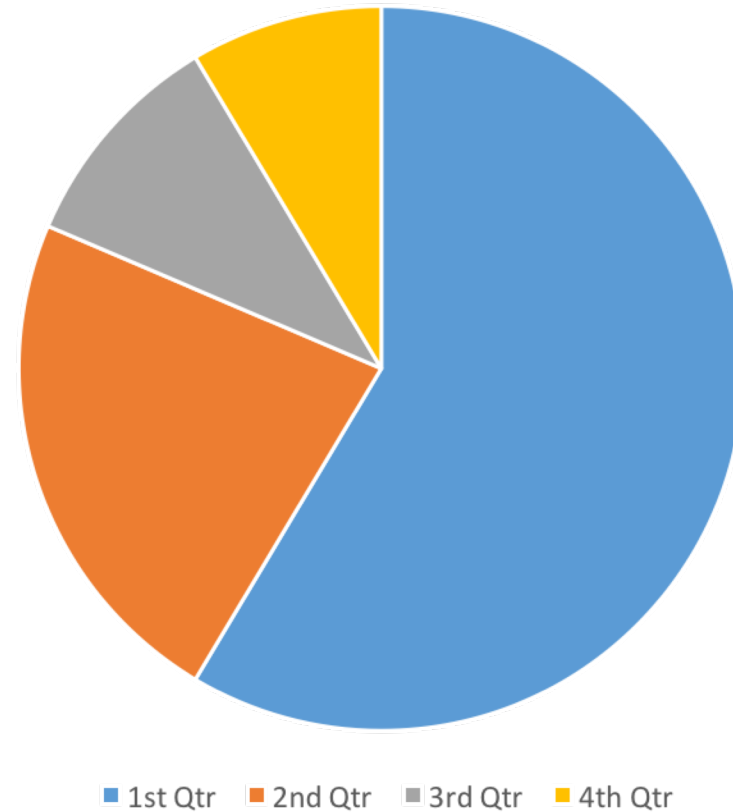
Designing Pie Charts

Objective

Objective

Define design
principles for
pie charts and
donut charts

When to Use a Pie Chart

- Single categorical variable
- Want a display a set of values associated with a single category.
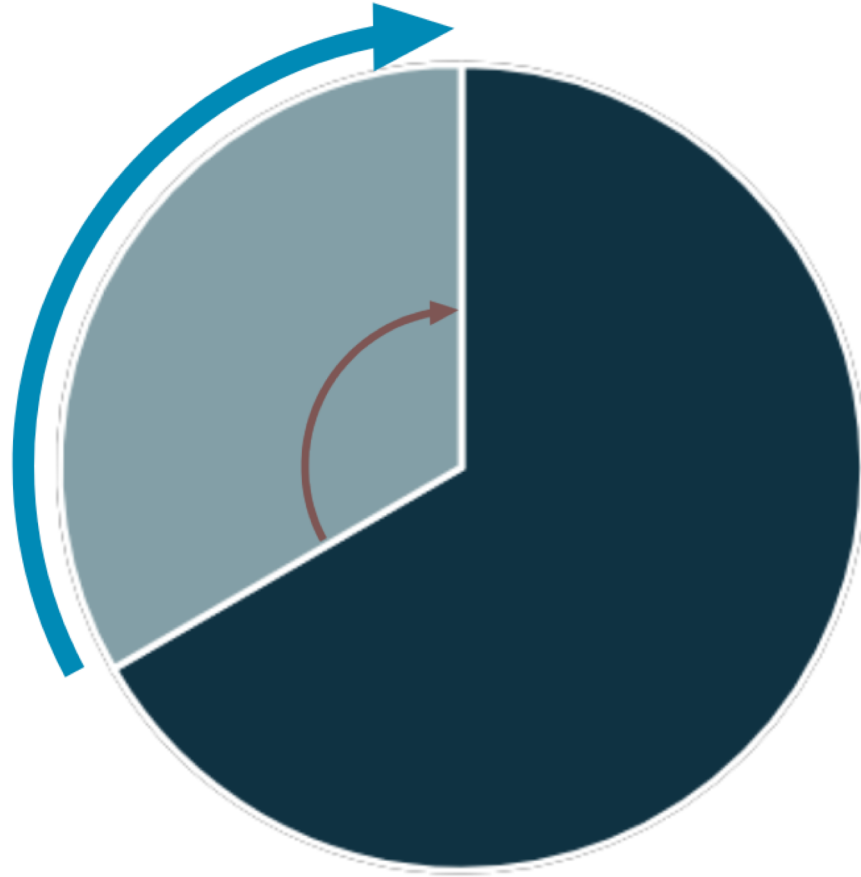

■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

Pie Charts

Use:

- Angle
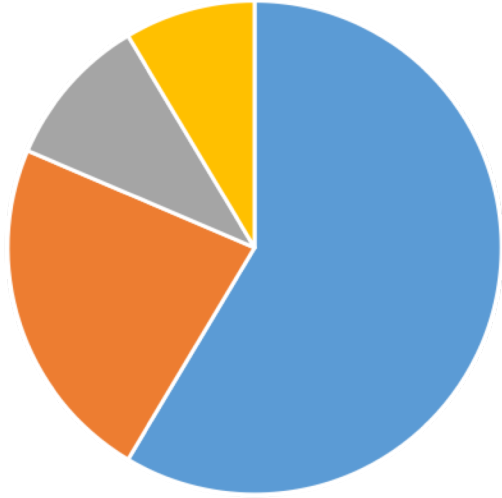- Area
- Arc Length

to encode values

Interpreting Pie Charts

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

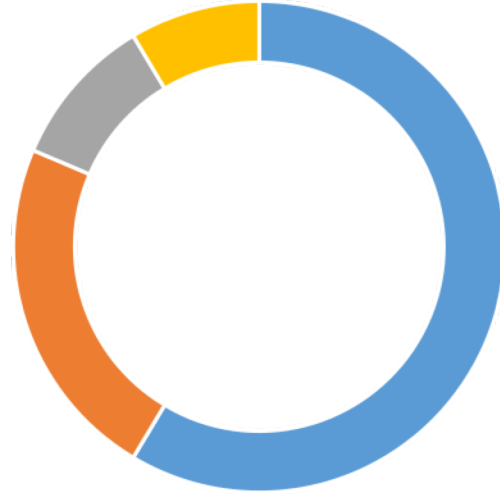Perceptual research shows that error is high when estimating values.

Pie Charts should be presented with values as pie slice labels.
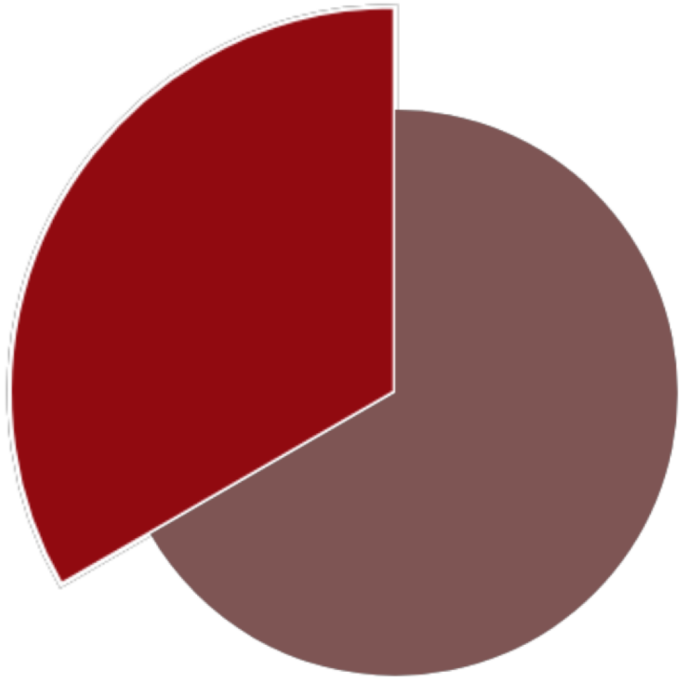
Visual Variables

| Angle is not a key visual clue
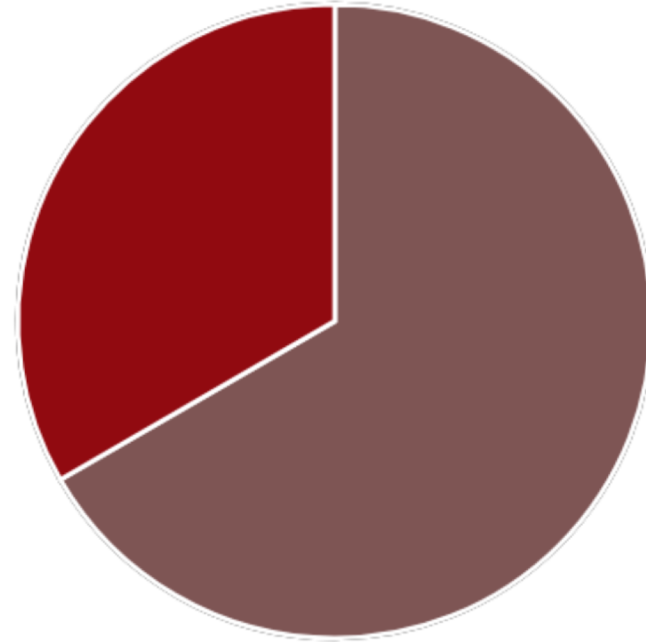
| Arc Length and Area are important

| Doughnut charts are just as effective

Interpreting Pie Chart Variants

Larger Slice

Exploded Pie