



Data Visualization

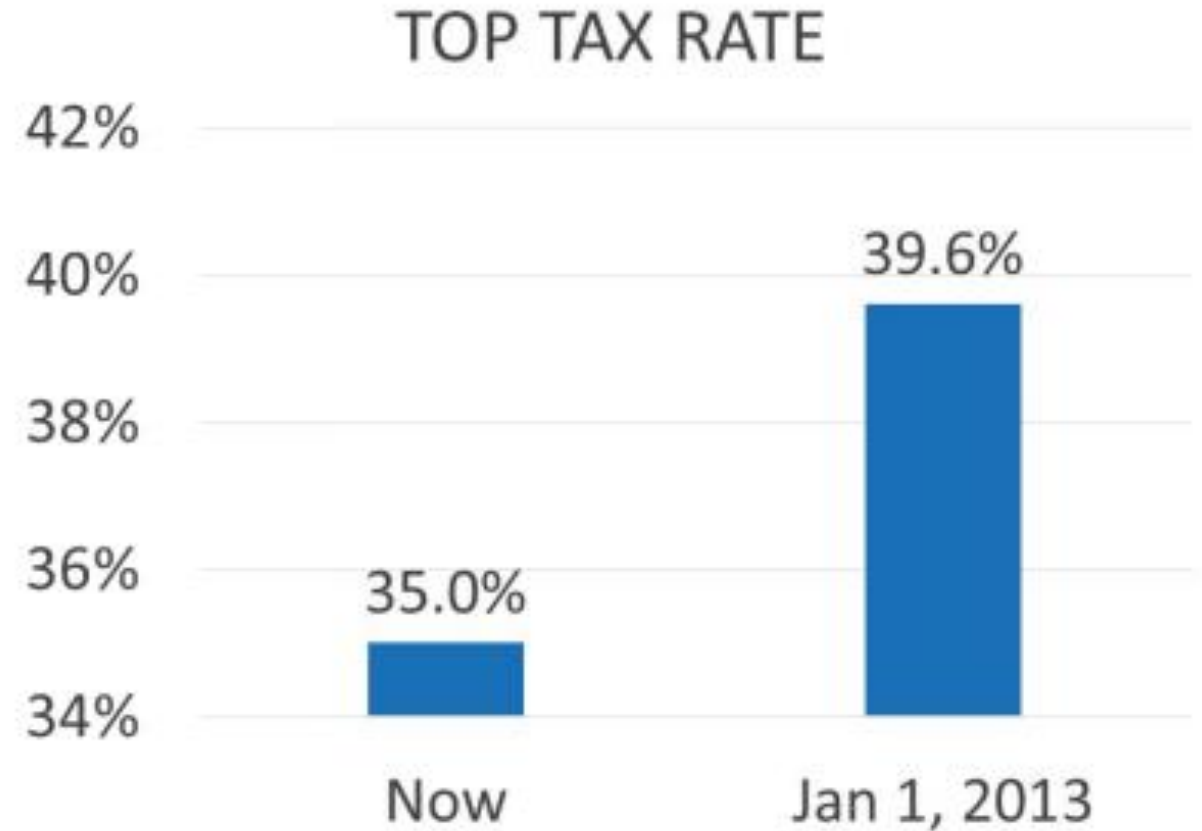
Essential Design Principles for Visualization

Practicing Good Ethics in Data Visualization

Bar Charts are easy
to interpret

Our eyes compare
the endpoints of
the bar

IF BUSH TAX CUTS EXPIRE

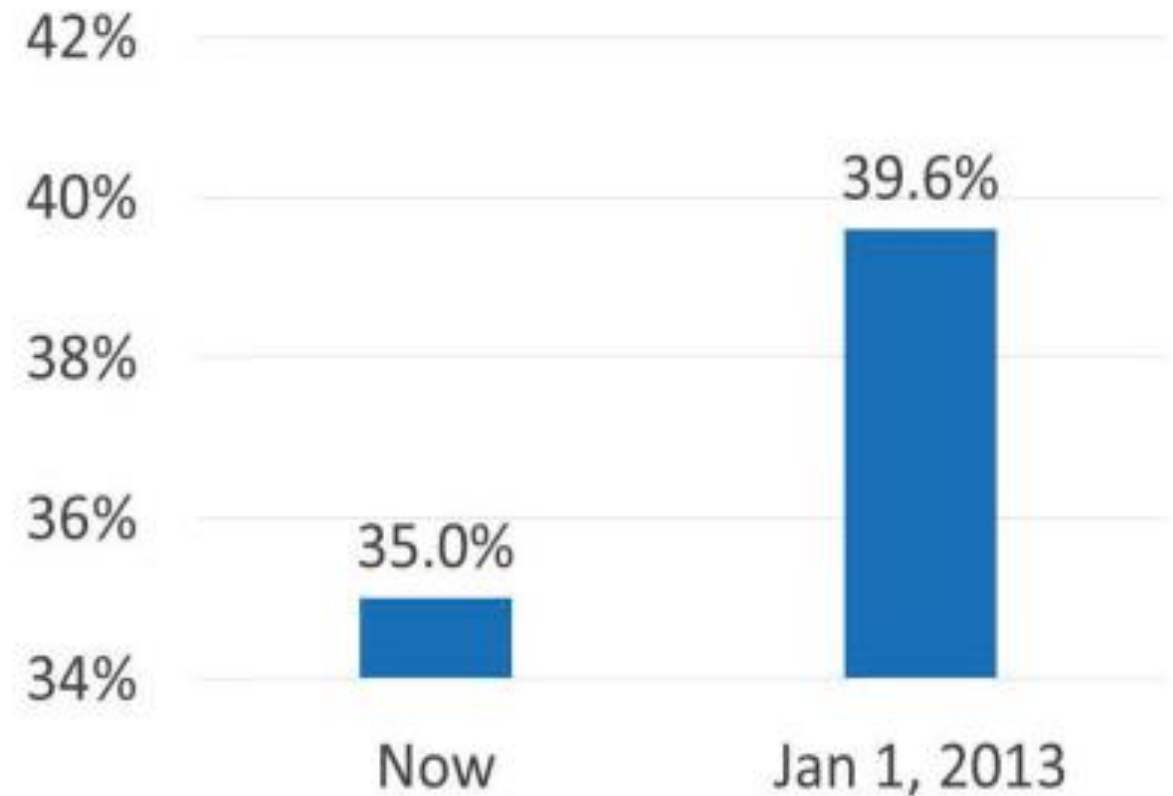


NOSY
NEWS CENTER

Bar graphs
traditionally have
zero as the
baseline



Non-Zero Baseline (mimics picture)



Standard practice
for bar graphs:

Start your baseline
at zero

Do not confuse or
annoy the data
consumer



Non-Zero Baseline (mimics picture)

39%

35.0%

34%

39.6%

Jan 1, 2013

Zero Baseline (correct way)

40%

35.0%

20%

0%

39.6%

Now

Jan 1, 2013

Same data

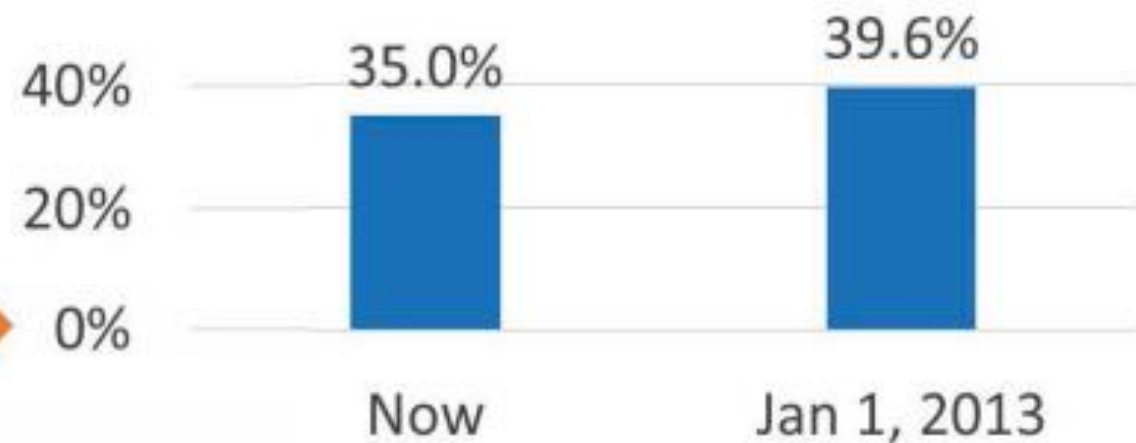
Different baseline



Non-Zero Baseline (mimics picture)



Zero Baseline (correct way)



Non-Zero Baseline (mimics picture)

Non-Zero Baseline (mimics picture)



Taxes (Graph
Percentage)

Baseline

Difference

Graph Visual %

Non-Zero Baseline
Nosy News

Now Jan, 1
2013

35% 39.6%

34 34

1 5.6

460%
 $(5.6 - 1) \times 100 = 460$

Zero Baseline
The Correct Way

Now Jan, 1 2013

35% 39.6%

0 0

35 39.6

13%

Zero Baseline (correct way)



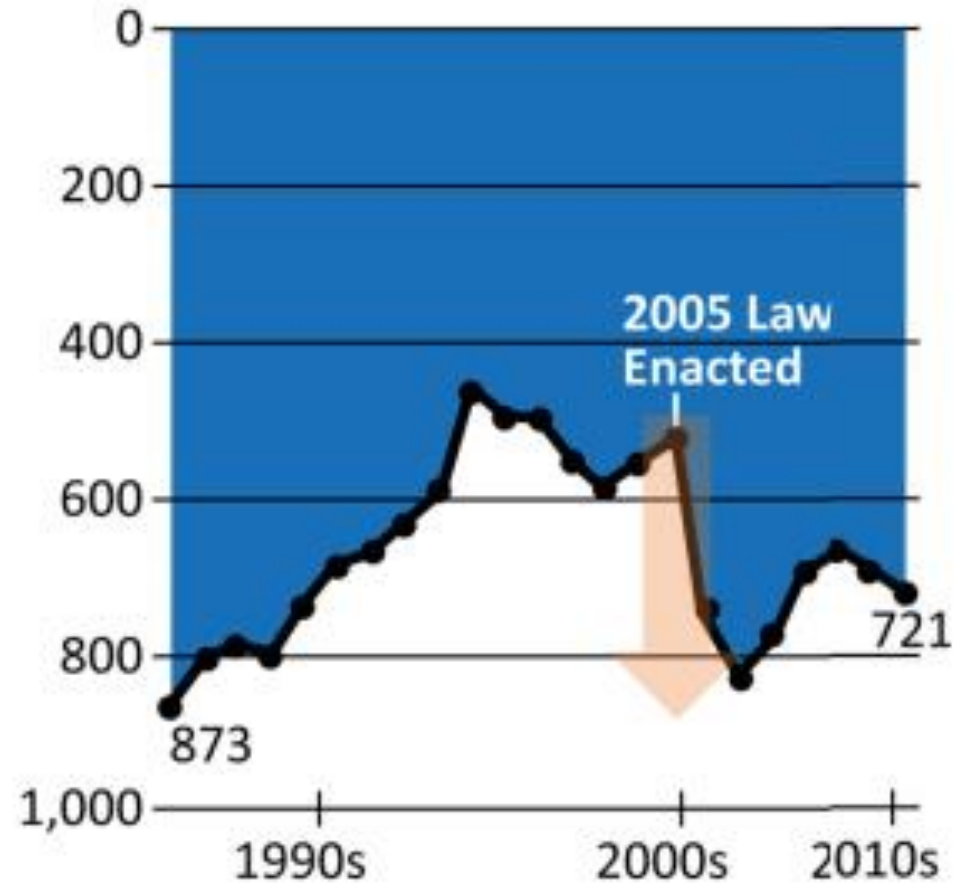
This graph misleads
the user

Reduce the
credibility of the
new outlet



Gun Deaths

Number of murders committed using firearms

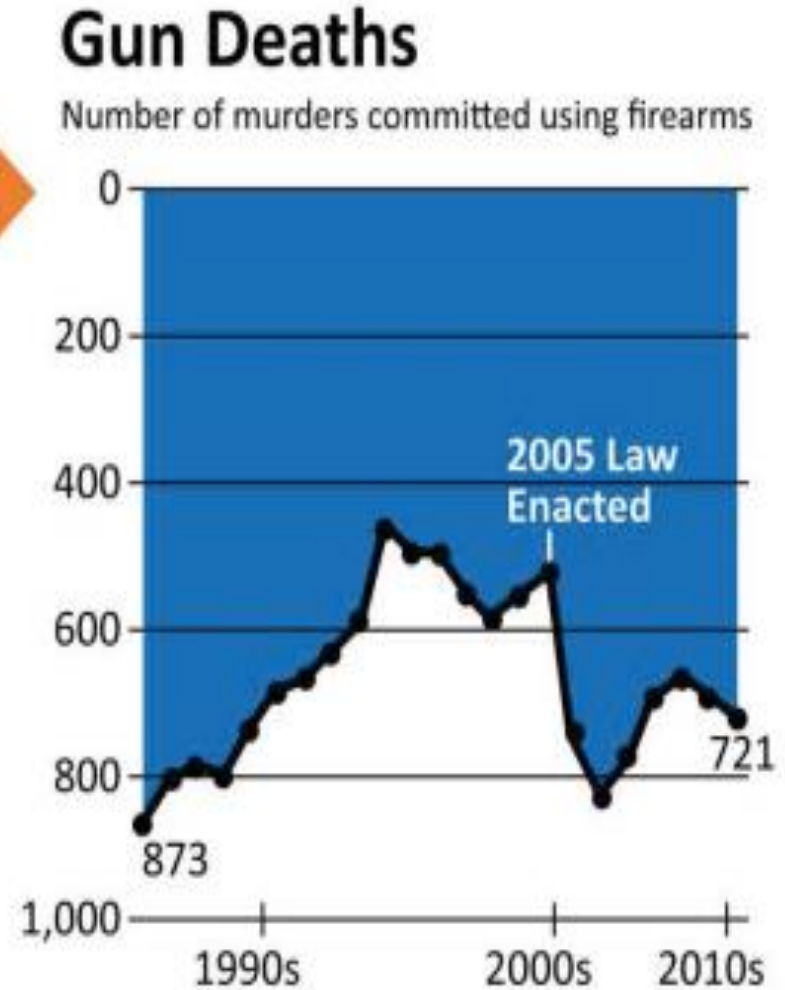


- Did you assume that there was a sharp decrease in gun deaths after 2005?

Note where the 0 is
on the Y-axis

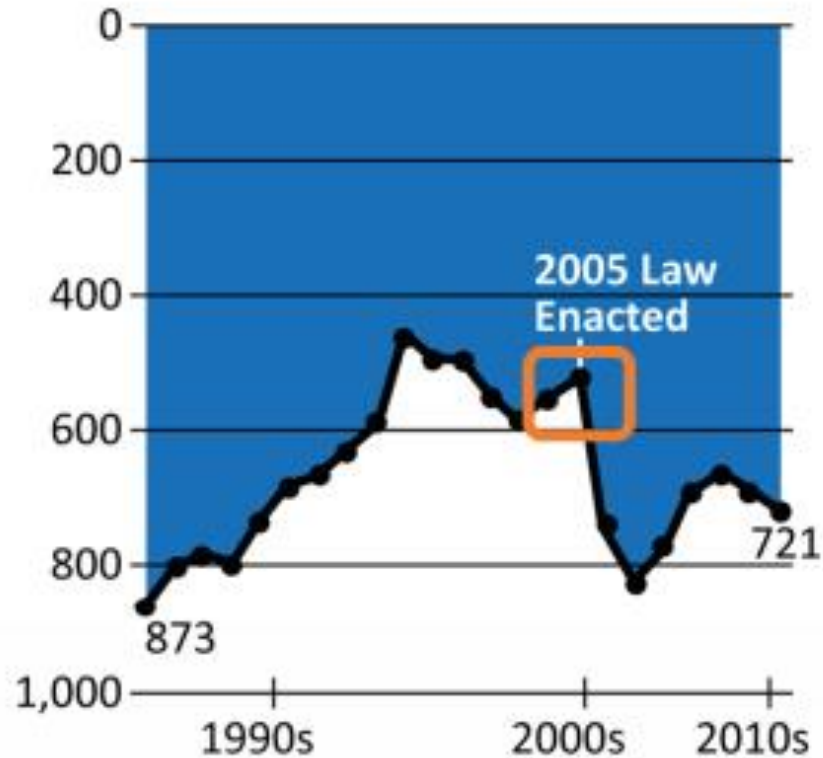
This is opposite to
how graphs are
typically drawn

Gun deaths actually
increased



Gun Deaths

Number of murders committed using firearms



Note the increase
in gun deaths after
the law was enacted

Gun Deaths

Number of murders committed using firearms



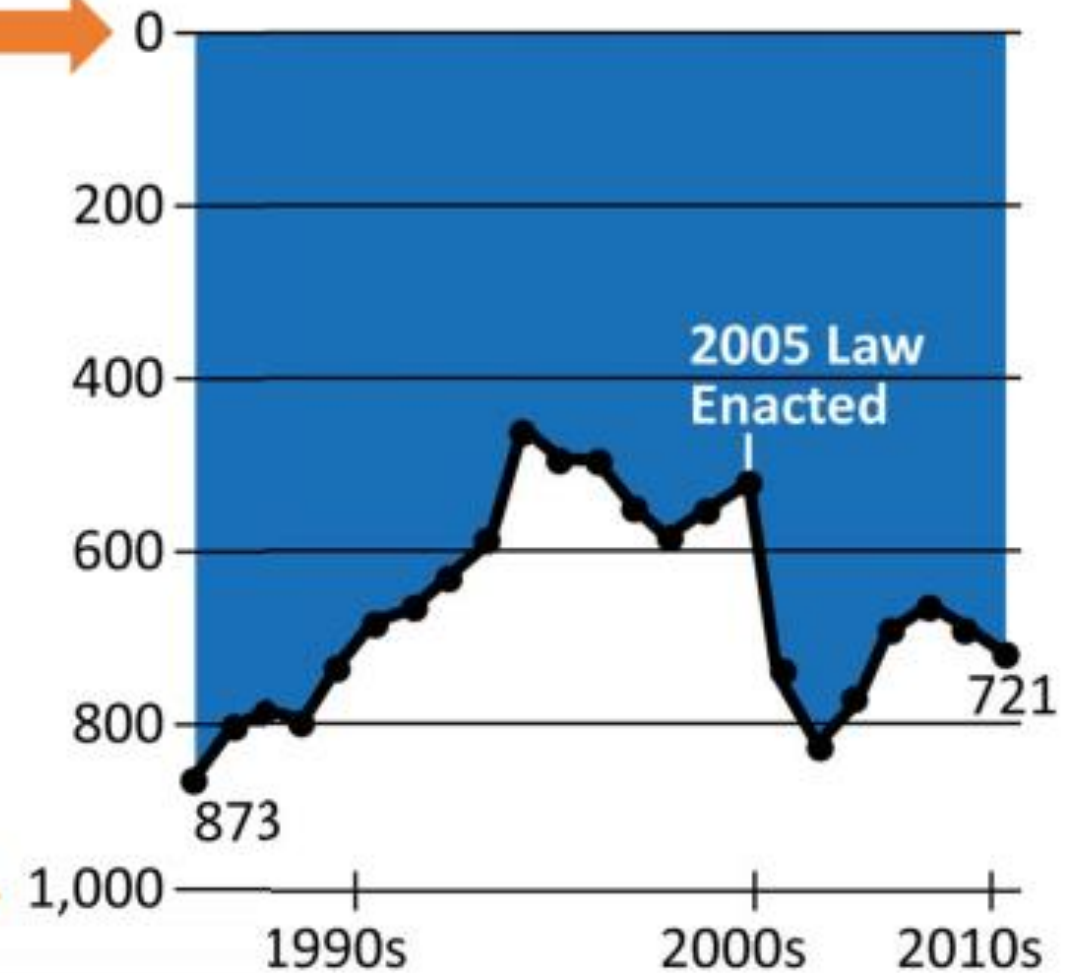
- Note the increase in gun deaths after the law was enacted

User should not
have to deviate
from standard ways
of presenting
graphs

Clearly state any
deviations

Gun Deaths

Number of murders committed using firearms

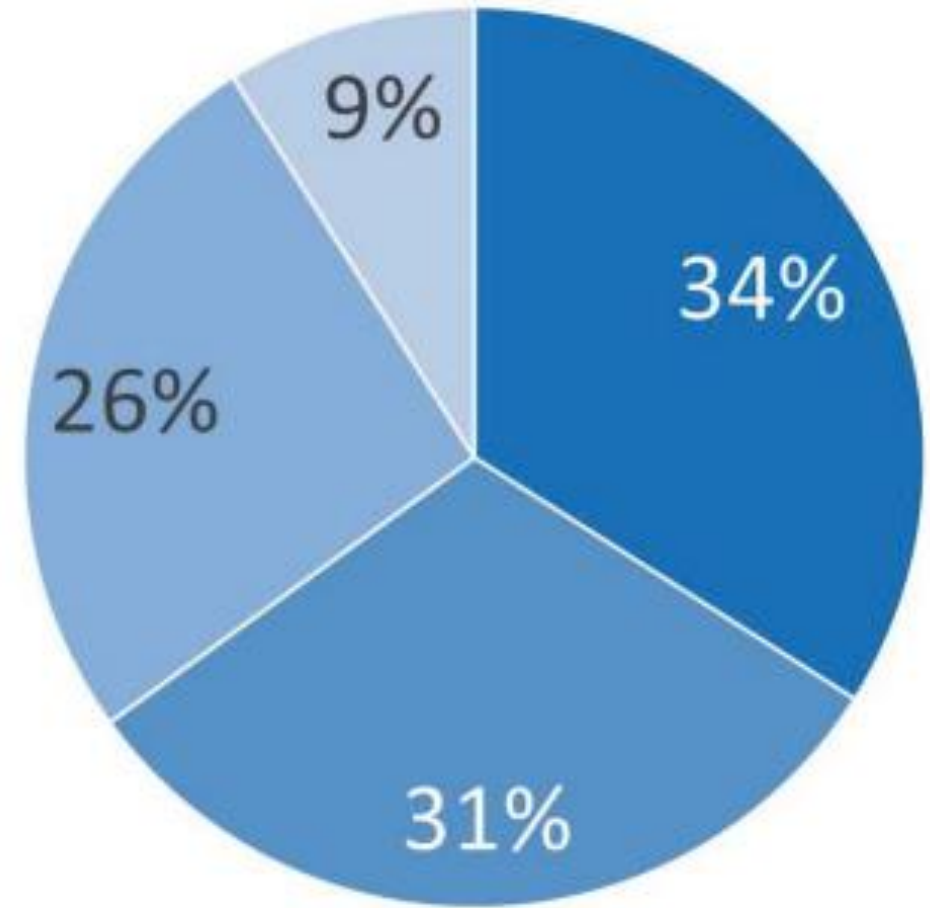




One of the most
widely used
visualizations

Seems to be an
ideal way to show
percentages

Pie Chart With Labels



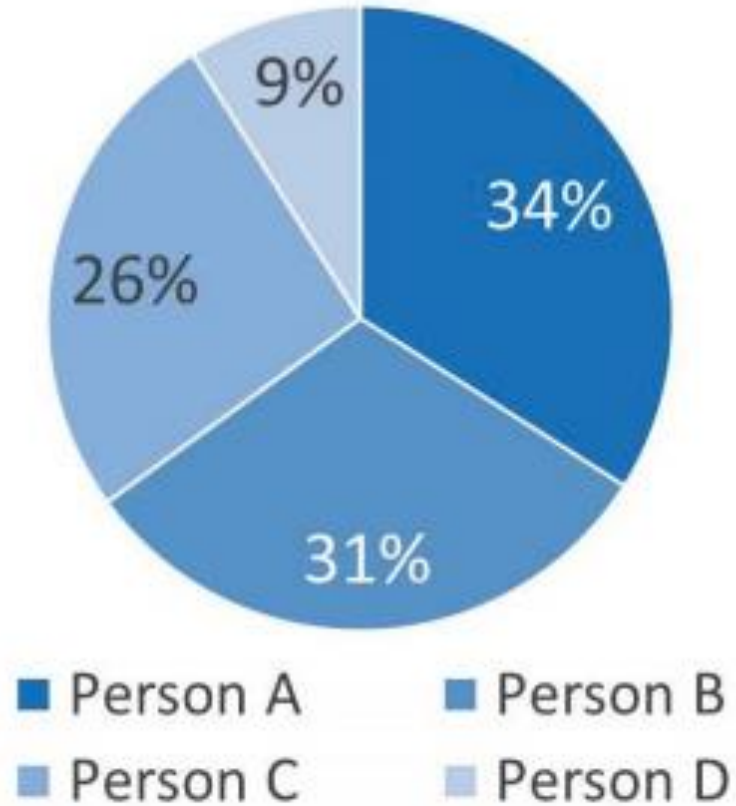
■ Person A

■ Person B

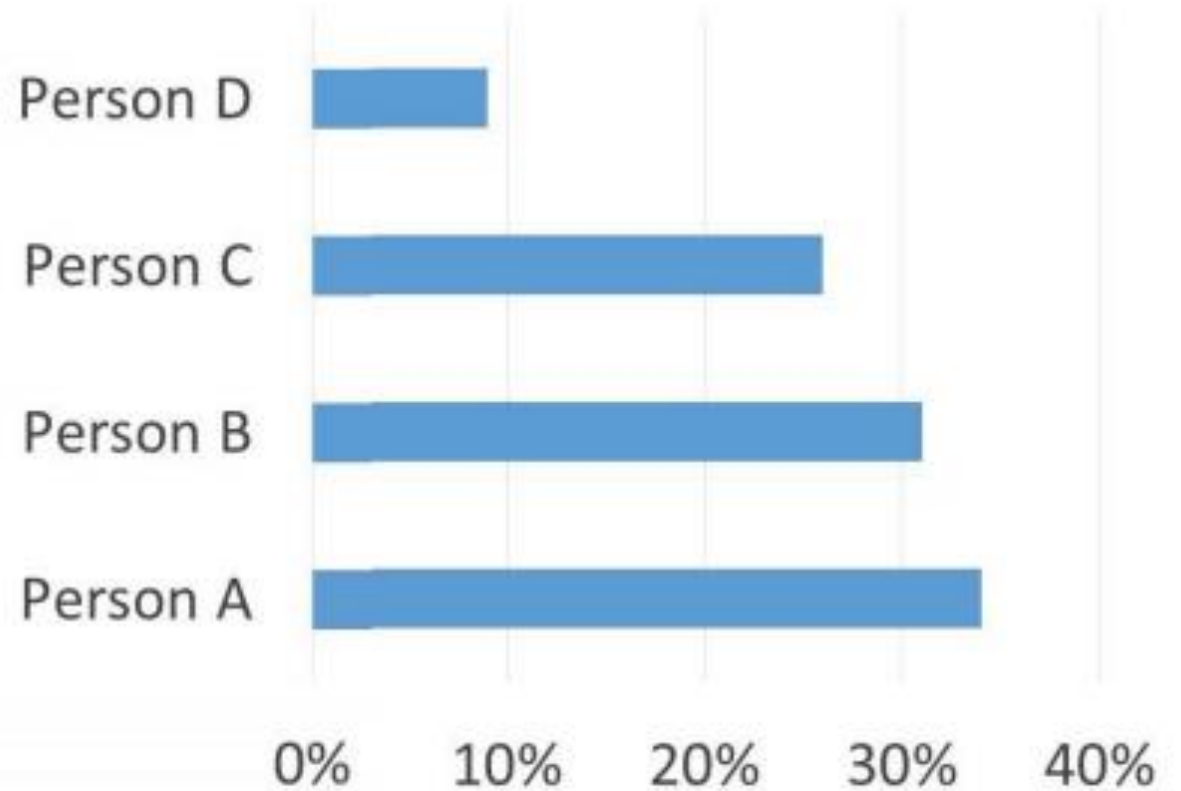
■ Person C

■ Person D

Pie Chart With Labels



Bar Graph

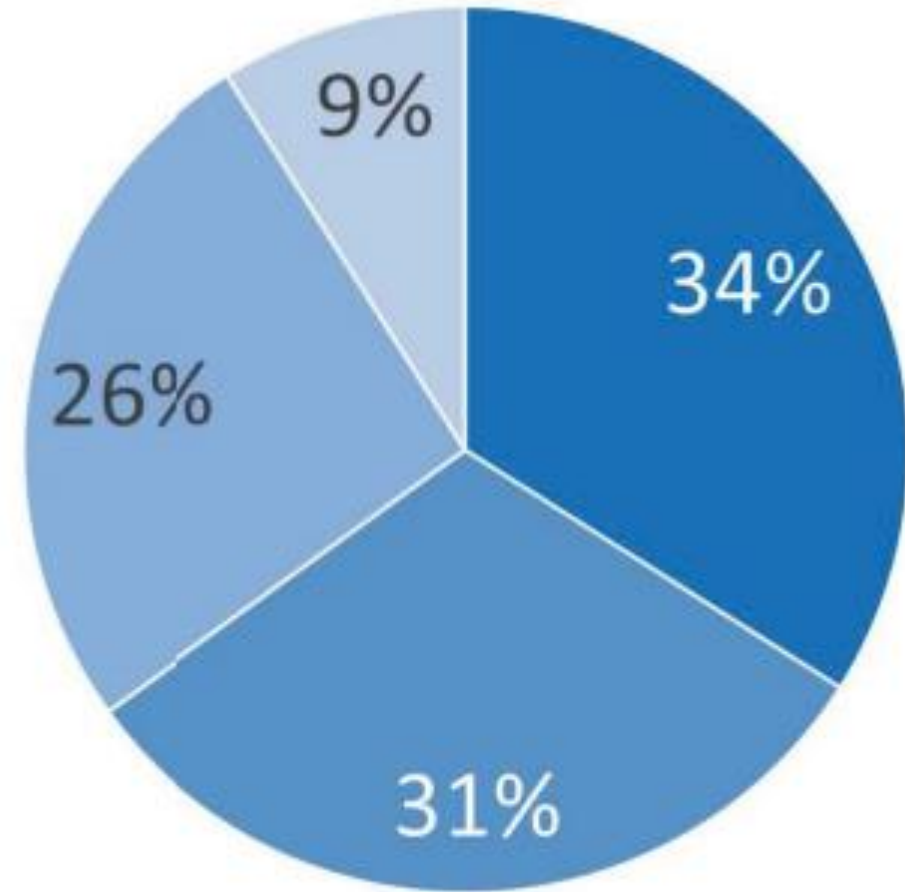


Use a bar chart instead

The pie wedges
look roughly the
same

The percentage
labels are necessary
to be sure

Pie Chart With Labels



■ Person A

■ Person B

■ Person C

■ Person D

The bar graph more clearly distinguishes the percentages

