



LIS 200

DATA AND INFOGRAPHICS

UNCG DATA LIBRARIANS



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OBJECTIVES

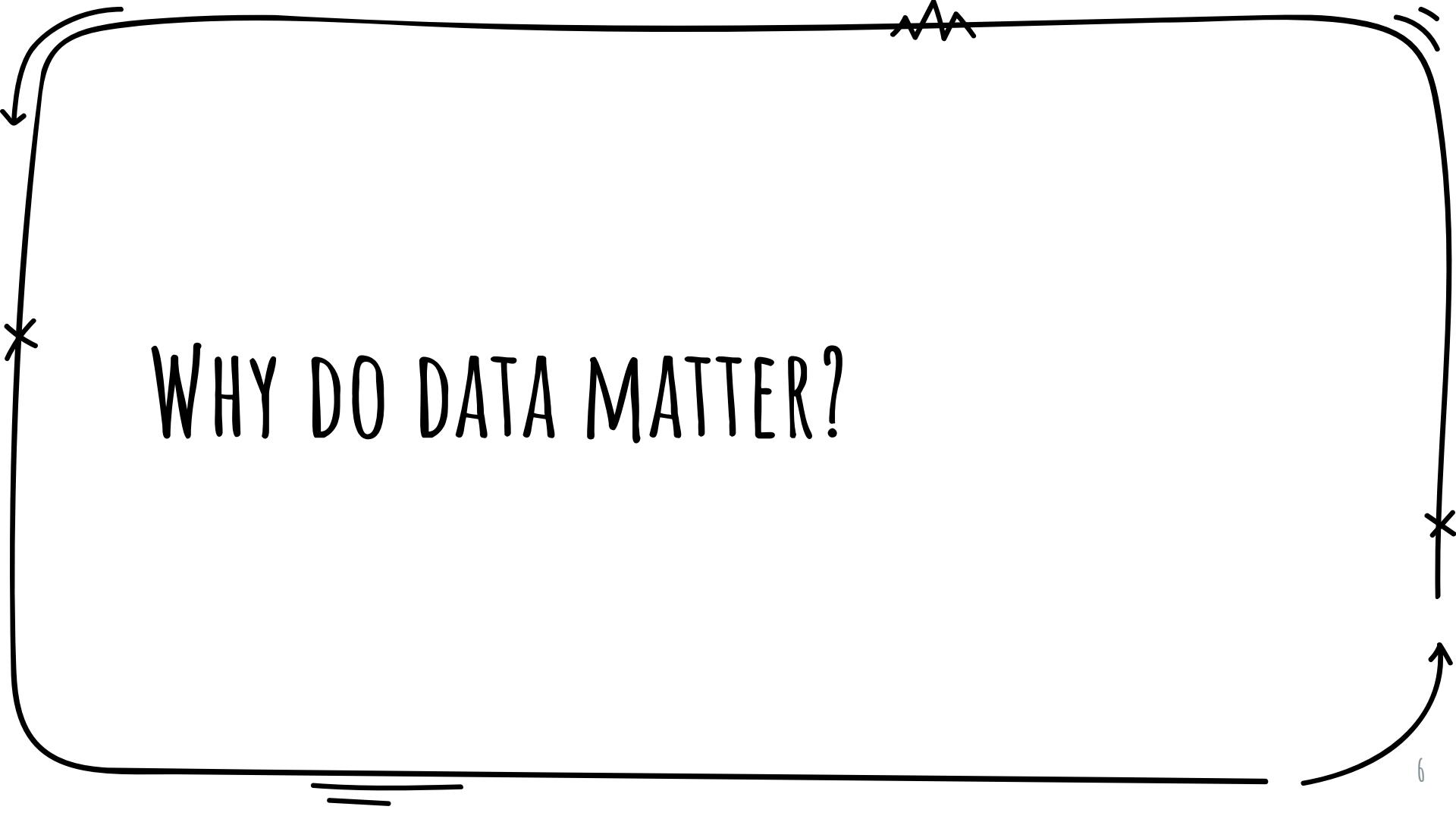
- ✗ What are data and statistics?
- ✗ What are data visualizations and infographics?
- ✗ How do we create effective infographics?

DATA VS. STATISTICS

- ✖ What are data?
- ✖ What are statistics?

TERMS TO KNOW

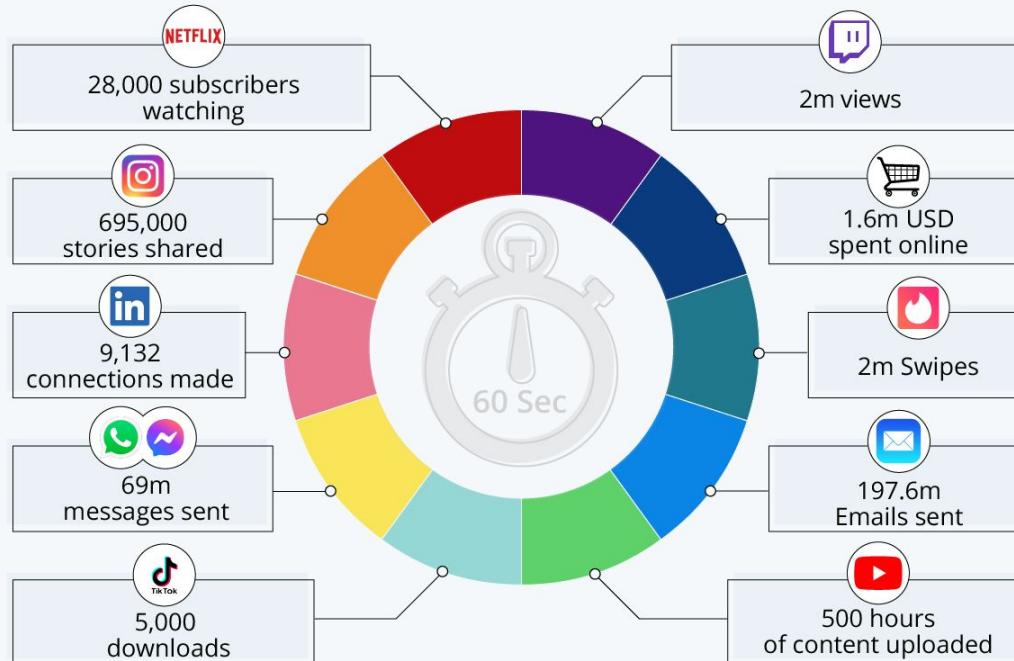
- **Data:** information, facts
- **Statistic:** information calculated from a sample of numerical data
- **Data Visualization:** visual representation of data or statistics
- **Infographic:** collection of data visualizations on a topic



WHY DO DATA MATTER?

A Minute on the Internet in 2021

Estimated amount of data created
on the internet in one minute



From:

<https://www.statista.com/chart/25443/estimated-amount-of-data-created-on-the-internet-in-one-minute/>

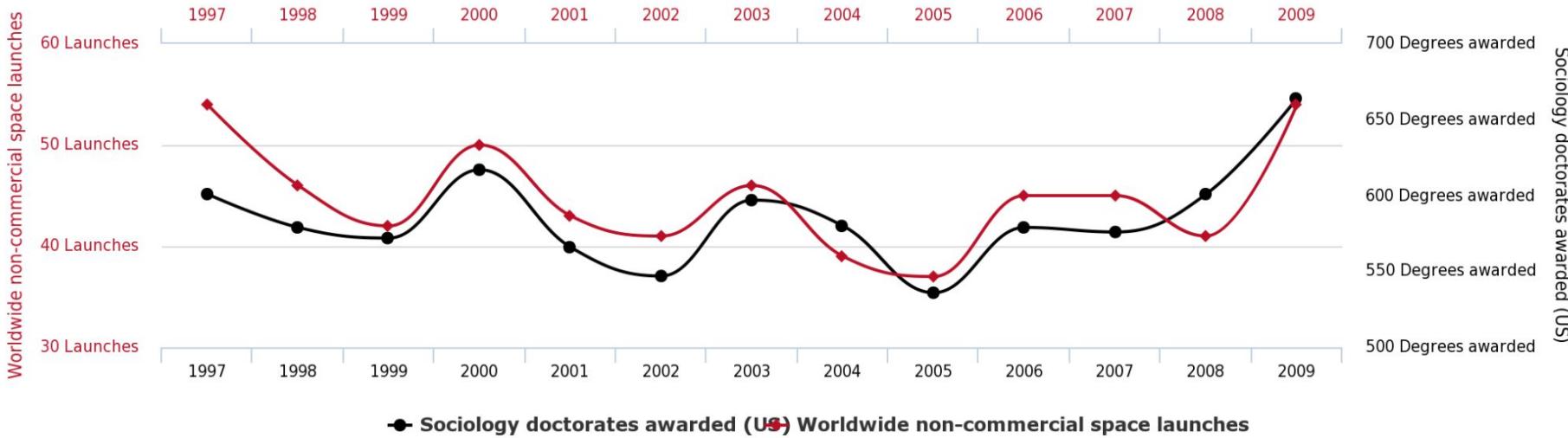
Source: Lori Lewis via AllAccess



Worldwide non-commercial space launches

correlates with

Sociology doctorates awarded (US)

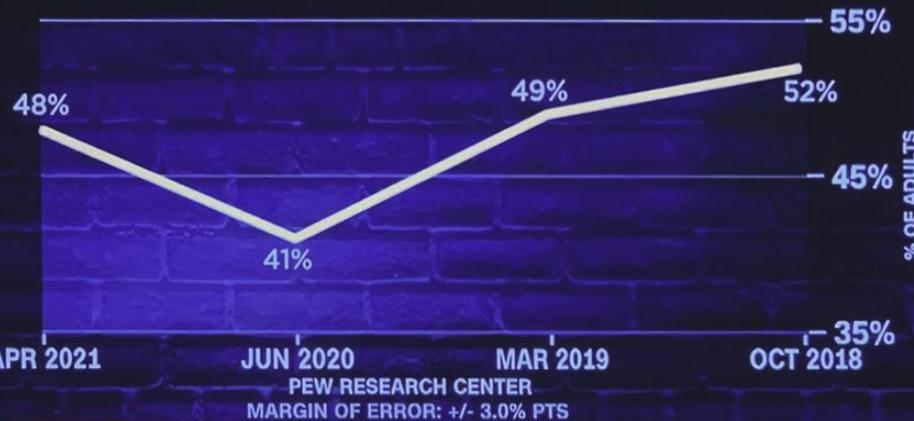


tylervigen.com



VIOLENT CRIME IS A VERY BIG PROBLEM

ADULTS



THE WIZARD OF ODDS

WHITE HOUSE PREPARES TO ADDRESS SURGE IN VIOLENT CRIME

LIVE

CNN

6:32 PM PT

"I LESS EAGER TO GET THE SHOT," JEFF ZIENTS SAYS ► BIDEN WANTED 70 CUOMO PRIME TIME

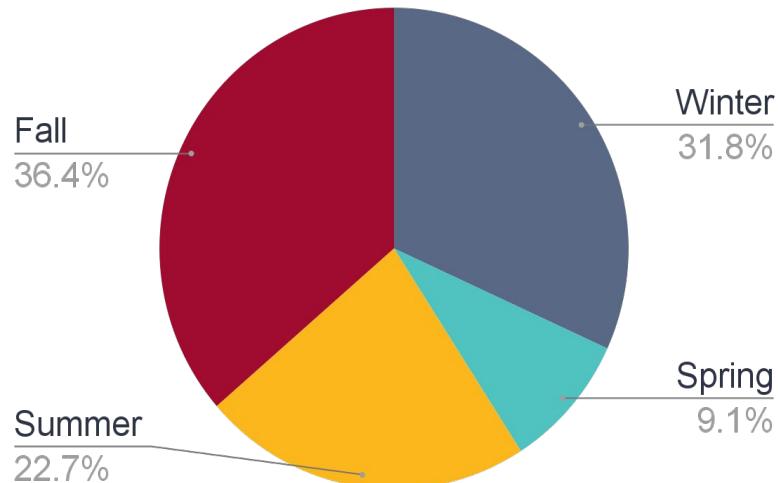
WHAT IS YOUR FAVORITE SEASON?

Submit your answer at go.uncg.edu/r22be8

Season	Responses
Winter	5
Spring	2
Summer	4
Fall	5



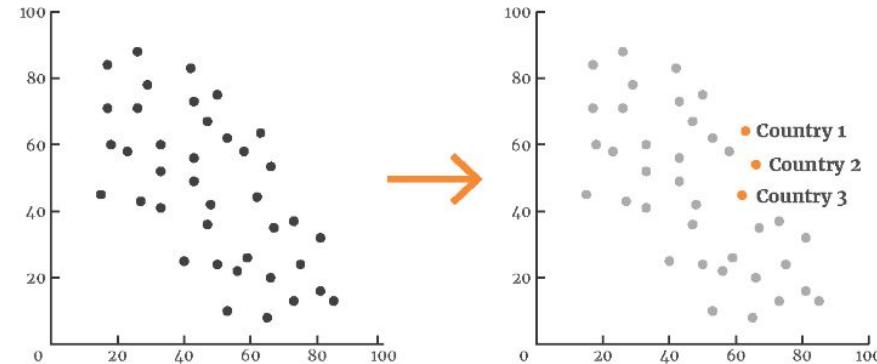
WHAT IS YOUR FAVORITE SEASON?



CORE PRINCIPLES OF DATA VISUALIZATION

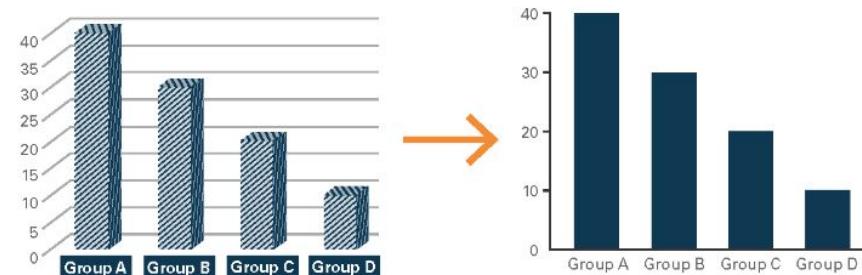
Show the data

People read graphs in a research report, article, or blog to understand the story being told. The data is the most important part of the graph and should be presented in the clearest way possible. But that does not mean that all of the data must be shown—indeed, many graphs show too much.



Reduce the clutter

Chart clutter, those unnecessary or distracting visual elements, will tend to reduce effectiveness. Clutter comes in the form of dark or heavy gridlines; unnecessary tick marks, labels, or text; unnecessary icons or pictures; ornamental shading and gradients; and unnecessary dimensions. Too often graphs use textured or filled gradients.



Integrate the text and the graph

Standard research reports often suffer from the **slideshow effect**, in which the writer narrates the text elements that appear in the graph. A better model is one in which visualizations are constructed to complement the text and at the same time to contain enough information to stand alone. As a simple example, legends that define or explain a line, bar, or point are often placed far from the content of the graph—off to the right or below the graph.

Integrated legends—right below the title, directly on the chart, or at the end of a line—are more accessible.

Preattentive Processing

Effective data visualization taps into the brain's **preattentive visual processing**. Because our eyes detect a limited set of visual characteristics (such as shape and contrast), we combine various characteristics of an object and unconsciously perceive them as comprising an image. Preattentive processing refers to the cognitive operations that can be performed prior to focusing attention on any particular region of an image. In other words, it's the stuff you notice right away.

Chart Title Here

(Y axis label here)

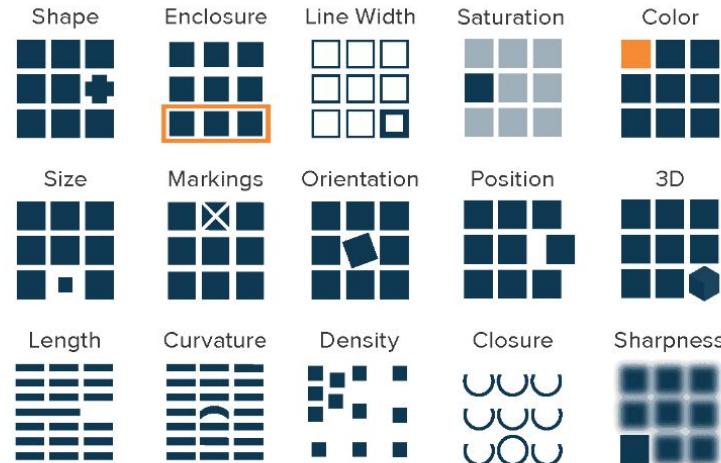
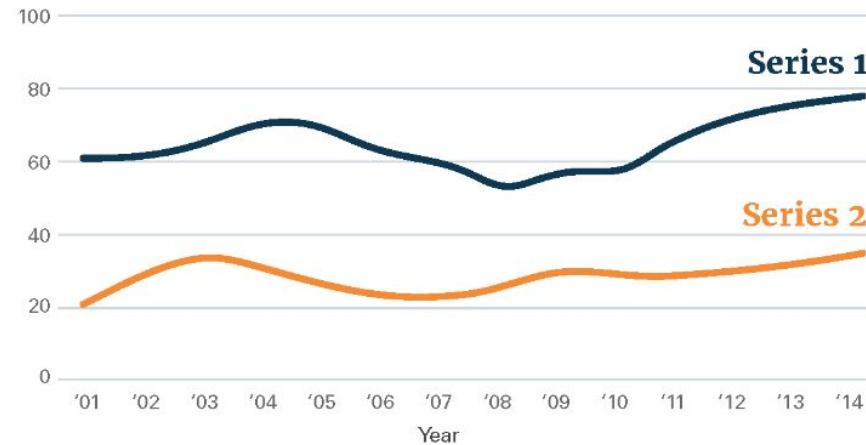
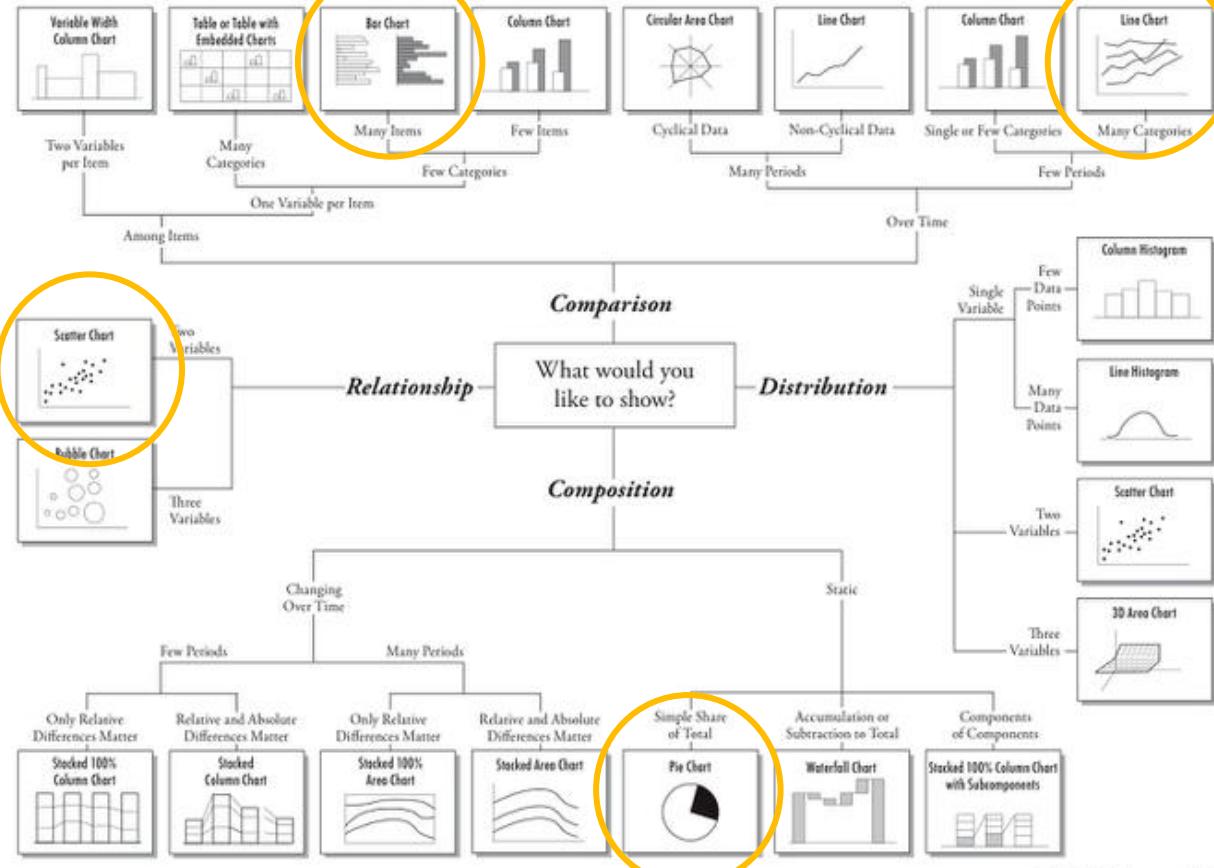


Chart Suggestions—A Thought-Starter



WHICH CHART DO I USE?

Line charts show changes over time

Bar graphs compare categories of data

Scatter plots show how data is spread out across categories

Pie charts show parts of a whole

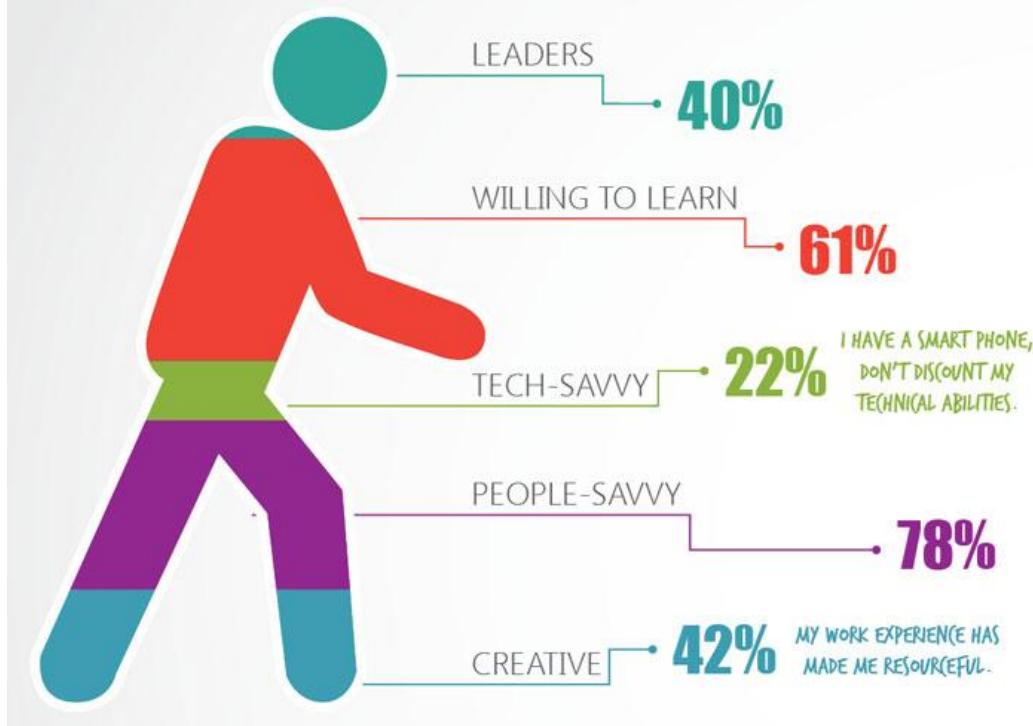


Help selecting a chart:
<https://datavizcatalogue.com/index.html>

MORE DATA VIZ RESOURCES

- X [How to Transform Text into Images that Tell a Story](#)
(infograph-specific, from Piktochart)
- X [Data visualization](#) (guidance from selecting charts to style from Material Design)
- X [Learn Data Viz](#) (From UNC Chapel Hill)

HOW BABY BOOMERS DESCRIBE THEMSELVES



From: Beyond.com (caption: a Beyond.com survey of 6,361 job seekers and veteran HR professionals, from April 12 - May 9, 2013).

TOOLS TO DO THE THING

- X [Canva](#)
- X [Piktochart](#)
- X [Infogram](#)
- X [Easel.ly](#)
- X [Datawrapper*](#)
- X [Google Sheets*](#)

ICONS & IMAGES

[The Noun Project](#)

[Flaticon](#)

[Unsplash](#)

No. of Responses

2
1.5
1
0.5
0

Winter

Spring

Summer

Fall

Season

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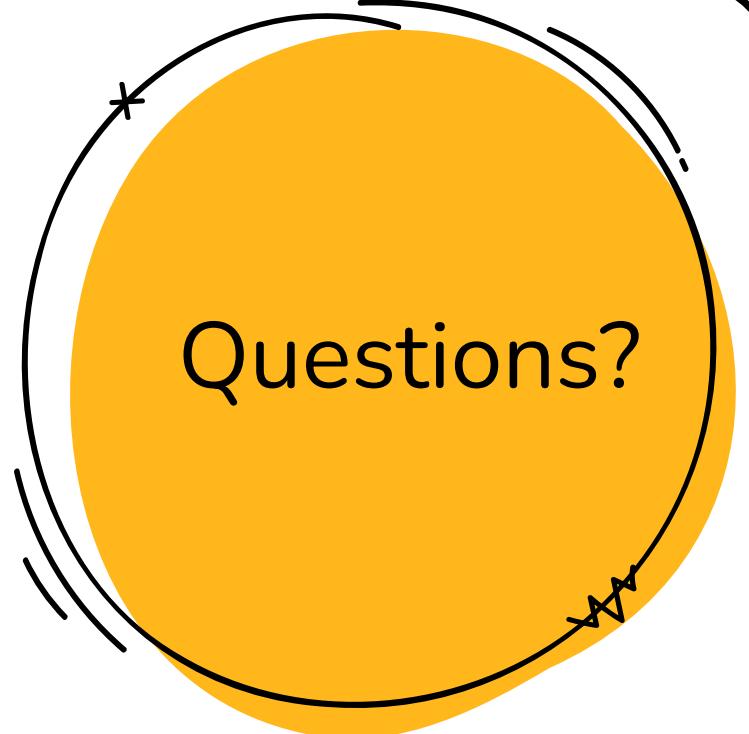
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Questions?

DATA VISUALIZATION TIPS: PRESENT THE FACTS

TRUTH

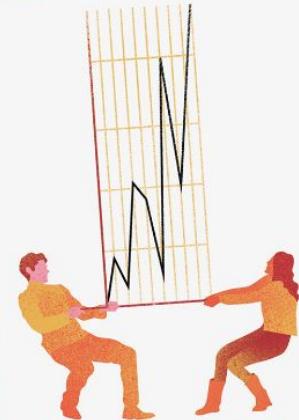
START FROM NOTHING



Bar charts are great for comparisons. To judge their end points, the bars should begin at a zero baseline.

PRESERVE THE FACTS

DISTORTED REALITY



Line charts often show a trend. Stretching the height of the graph can create fake drama, while stretching the width can underplay it.

DITCH THE PIE



Pie charts seem friendly, but in reality they're hard to read. In most cases, you can find a better alternative.

SIZE MATTERS



It's harder to compare areas or volumes than lengths. To avoid people getting the wrong impression, use them as a last resort.

DATA VISUALIZATION TIPS: LESS IS MORE

STICK TO THE POINT

135.56777890223

Extra decimal places look impressive and imply accuracy, but they're often pointless. So, take a step back and round numbers off before plotting.

SPARE THE INK

Background, borders, shading, dark grid lines and needless labels are your enemies. Banish them to draw attention to the data.

A DIMENSION TOO FAR

Unless you're actually plotting the third dimension, don't use 3D. It skews the data and makes comparisons harder.

OVER THE RAINBOW

Use color to communicate information and not for decoration. Too many colors can confuse and disorient.

LESS IS MORE

DATA VISUALIZATION TIPS: KEEP IT SIMPLE

AVOID MYSTERIES

Text is your friend. Thoughtful use of labels means no one's in the dark. Every chart and every axis need at least a title.

A TALE OF TWO STORIES

Charting two sets of data with one scale on the left and another on the right can be confusing, and suggests a relationship that may not exist.

STAND ON THE RIGHT

Tables are good for looking up individual numbers. But, to help people scan and compare them, align whole numbers flush right.

KEEP IT SIMPLE

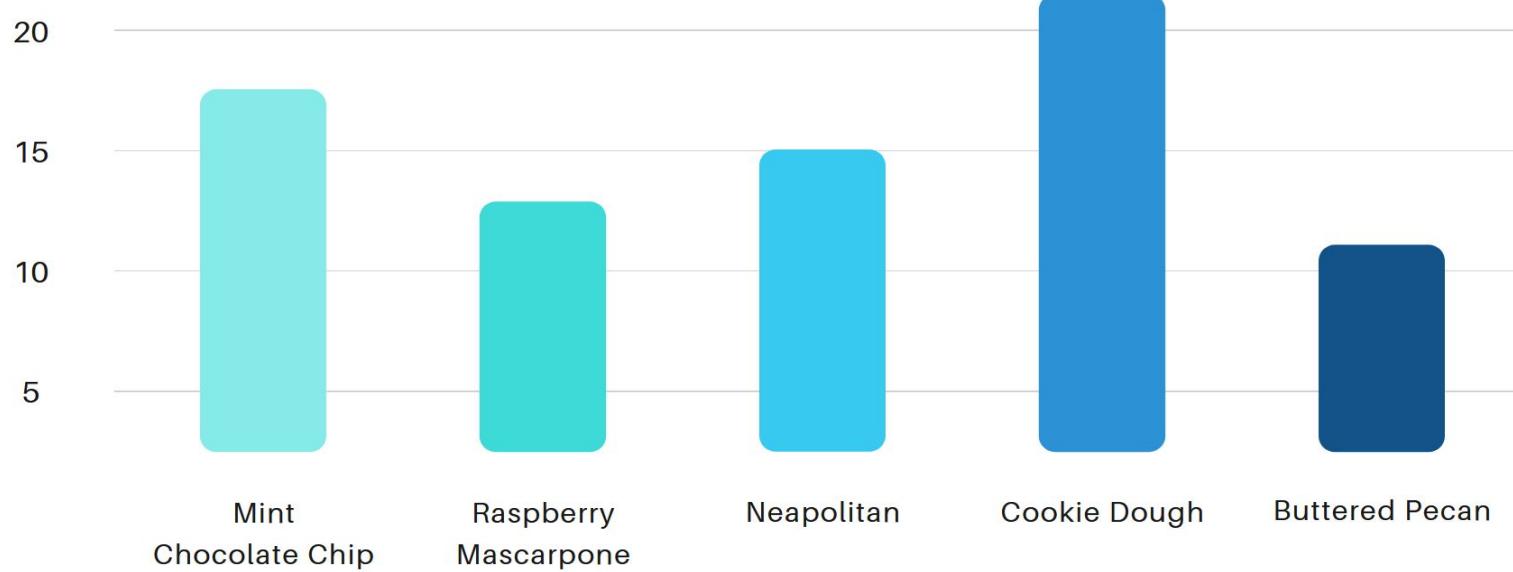
With charts, simpler is always better. To keep things even clearer, when you have one or two values, just show the numbers.

BACK TO BASICS

CANVA

What's your flavor?

The Scoop Group Ice Cream Survey



SOCIAL MEDIA PLATFORMS



60%



20%



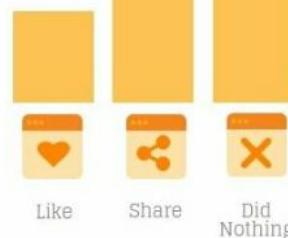
Twitter

80%



10%

RESPONSES



PIKTOCHART

INFOGRAPHIC

EXECUTIVE DASHBOARD

TOTAL CUSTOMERS

3,136 +9%
LAST 30 DAYS



REVENUE YTD

\$1,213,136 +22%
VS LAST YEAR



EMPLOYEE SATISFACTION

81% -2%
LAST 30 DAYS



LAST UPDATE: 18 JAN 2018

FUNNEL CONVERSION RATE



WEBSITE VISITORS

213,136 +9%
LAST 30 DAYS



MONTHLY ACTIVE USERS

78,136 +2%
LAST 30 DAYS



NUMBER OF TRIALS

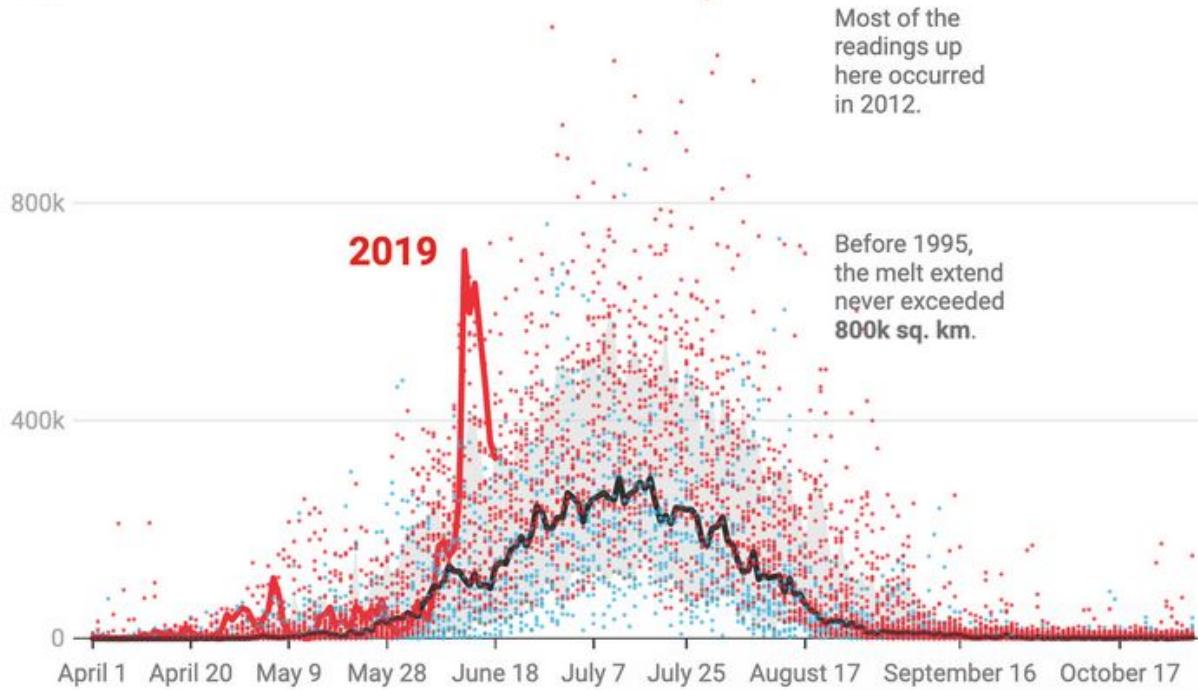
7,085 +14%
LAST 30 DAYS



SALES & CUSTOMERS BY REGION



DATAWRAPPER



Source: National Snow and Ice Data Center/Thomas Mote, University of Georgia