

# Data for Change

Capacity building learning series

*“User- centered analysis”*

Presented by:



In Partnership With:



Supported by:



# Project Objective

To test SID collection with more service-users to better understand how to **best support agencies** in:

- a) collecting socio-demographic data
- b) using the data to advance better outcomes for equity-deserving communities
- c) socializing the collection methodology & use of tools across the community social services sector

# Data for Change Project Model

## → Knowledge Mobilization Hub

- Project Logistics
- Partner Convening
- Host Knowledge Mobilization Online Hub

## → Capacity Building Sessions

- Facilitate capacity building sessions to support agencies with data collection & responsible usage

## → Community of Practice & Partnership Table

- Partnership Table support & participate in project implementation
- Community of Practice features a panelist discussion & peer support network for agencies

## → Capacity Building Sessions

- Facilitate capacity building sessions to support agencies with data collection & responsible usage





### STAGE ONE: PLAN & BUILD

April: Organizational Readiness



May: Planning for Data Collection



May: CoP



### STAGE THREE: ANALYSIS & INTERPRET

August: Trauma Informed Practice



September: User-centered analysis



October: CoP



### STAGE TWO: COLLECT & STORE

June: Org. Change Management



July: Data collection tools and systems



July: CoP



### STAGE FOUR: SHARE & USE

October: Equity use of Data



November: Learning for improvement



December: CoP



*All sessions will virtually be recorded and later uploaded to the knowledge hub website*

## Reminder: Self-Care & Wellbeing

 **We're doing hard work, together — be kind to yourself as we go.**

### **Your Wellbeing Matters**

As we move through these workshops, remember:

- **Pace yourself** — there's no rush
- **Step away when needed** — breaks are encouraged
- **Practice self-care** — whatever that looks like for you
- **You're not alone** — we're in this together

### **Everything is Recorded**

All sessions are recorded so you can:

- **Pause and return later**
- **Catch up on what you missed**
- **Engage when you're ready**

# Data for Change Knowledge Hub

[Dataforchange.ca](https://Dataforchange.ca) is a shared digital hub for resources and connections on Social Identity Data collection in the community social services sector.

On The Hub You'll Find:

- ✓ **To register for upcoming workshops!**
- ✓ Video recordings and downloadable resources from past capacity building workshops
- ✓ Practical tools to support equity and systems change
- ✓ Sign Up sheet to stay connected on all things Data for Change

Register for upcoming workshops here: [Capacity Building – Data for Change](#)



LogicalOutcomes is based in Toronto, on the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee, and the Wendat peoples. Toronto is now home to many diverse First Nations, Inuit and Métis peoples.

As people who live and work in this place, we acknowledge our responsibility to respect and uphold the treaties that govern this land. These include Treaty 13, signed with the Mississaugas of the Credit First Nation. We also recognize the enduring relevance of the Dish with One Spoon wampum agreement, a treaty between Indigenous nations in the Great Lakes region that binds the peoples who inhabit this land to share it well and protect it.



**We're a Canadian nonprofit with a mission to build evaluation and learning capacity.**

We offer:

- Research and evaluation services
- Monitoring, evaluation and learning systems
- Evaluation coaching and capacity building
- AI solutions for non-profits

# What we'll cover today:

1. Our goals for the workshop
2. User-centered visual design
3. Selecting a chart type
4. Practices for effective data viz
5. Practices for equitable data viz
6. Disaggregating responsibly
7. Dashboard demo





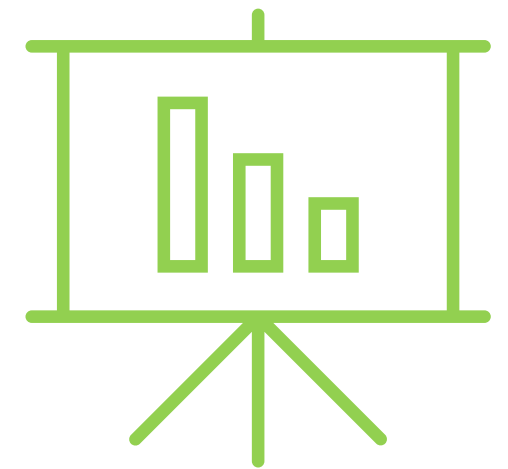
# 1. Our goals:

To support participants to:

- Tell clear stories with data
- Work with (small) numbers responsibly
- Disaggregate data in ways that reveal important patterns and honour the communities you serve

# Why visualize?

- Results are more persuasive when presented in charts.
- Charts and graphs add credibility to our data stories, even when they simply illustrate the larger narrative.
- Visualizing our data helps us to communicate a point.



# What is user-centered design?

- Grounded in **empathy for the user** and a respect for their needs, goals, workflows, and orientation to a system/product.
- Focus on **usability** – making it easy for people to accomplish their goals.
- Achieved by involving users in design and dev (**co-design**), and testing/refining over time.

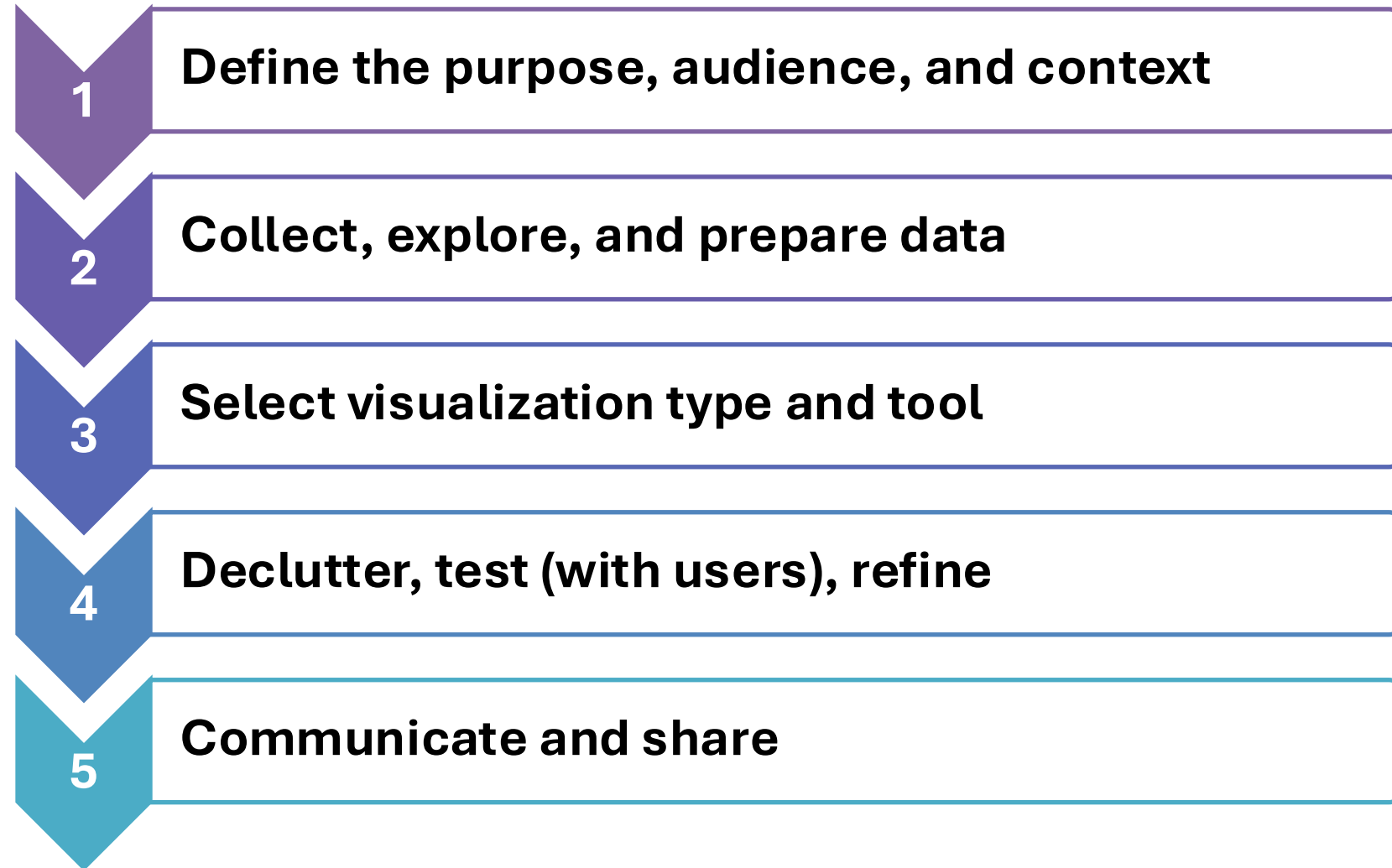


# What is equitable data visualization?

- **Empathy** for the user is extended to the people whose stories you're telling in your data visualization.
- Framing, labels, icons and other elements communicate **respect** for the people and communities behind the data points.
- Achieved by **involving community** in data viz design (sharing draft reports for feedback; iterating together).



# Steps for creating effective visualizations



# 1. Define purpose, context, audience



## What story do you want to tell with your data?

Who you're serving, participant experiences,  
program outcomes, change over time?



## Who is your audience?

Funders? Staff? Community members? What  
decisions will they be making with this data?

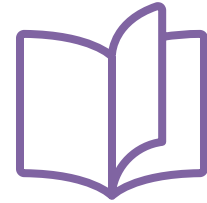


## What is the best way to communicate with them?

## **2. Collect, explore, prepare**

- Gather your data.
- Clean up your spreadsheet.
- Explore the data in tabular form.
- Identify gaps and work to fill them.
- Look for patterns and stories.
- Triangulate against other sources.
- Figure out which stories to prioritize and illustrate with data visualizations.

### **3. Find the right chart type and tool**



**Depends on the story you want to tell**



**Depends on your audience's goals/needs**



**Depends on your study and set-up: one-time insight or regular monitoring?**

# When a single number matters most

72%

Big number



Pie chart



Bar chart

# When you want to compare numbers



Clustered column



Back-to-back



Slope graph

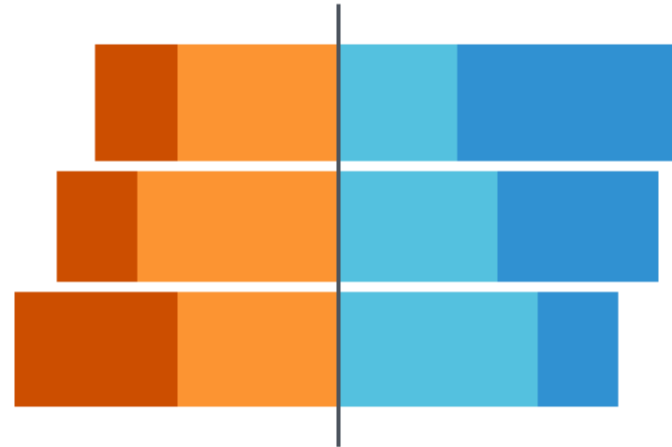


Line chart

# When you want to report survey findings



Stacked bar



Diverging bar

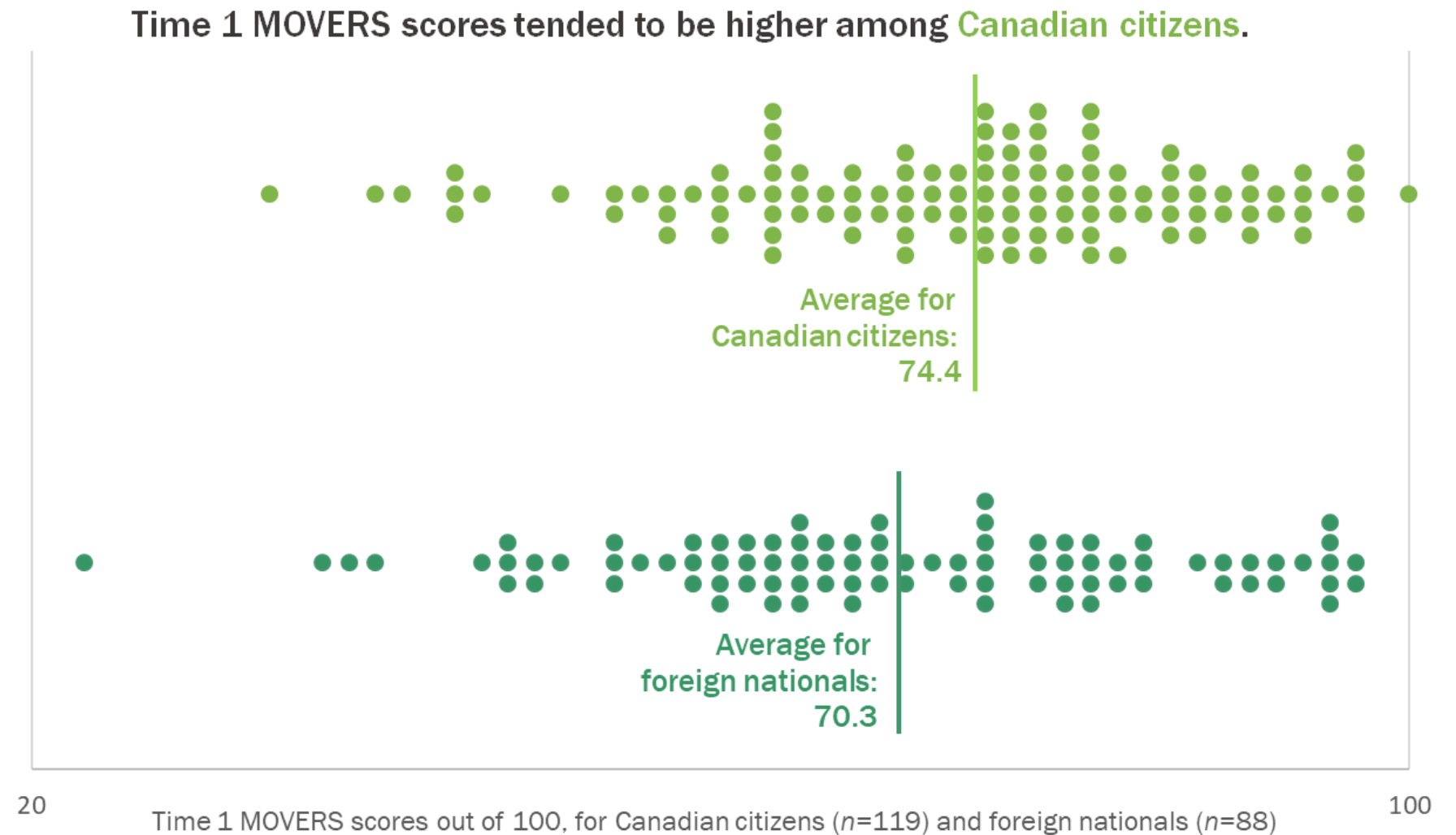


**92%**  
achieved  
their goal

Number + icon

# When you want to compare results by group (with nuance)

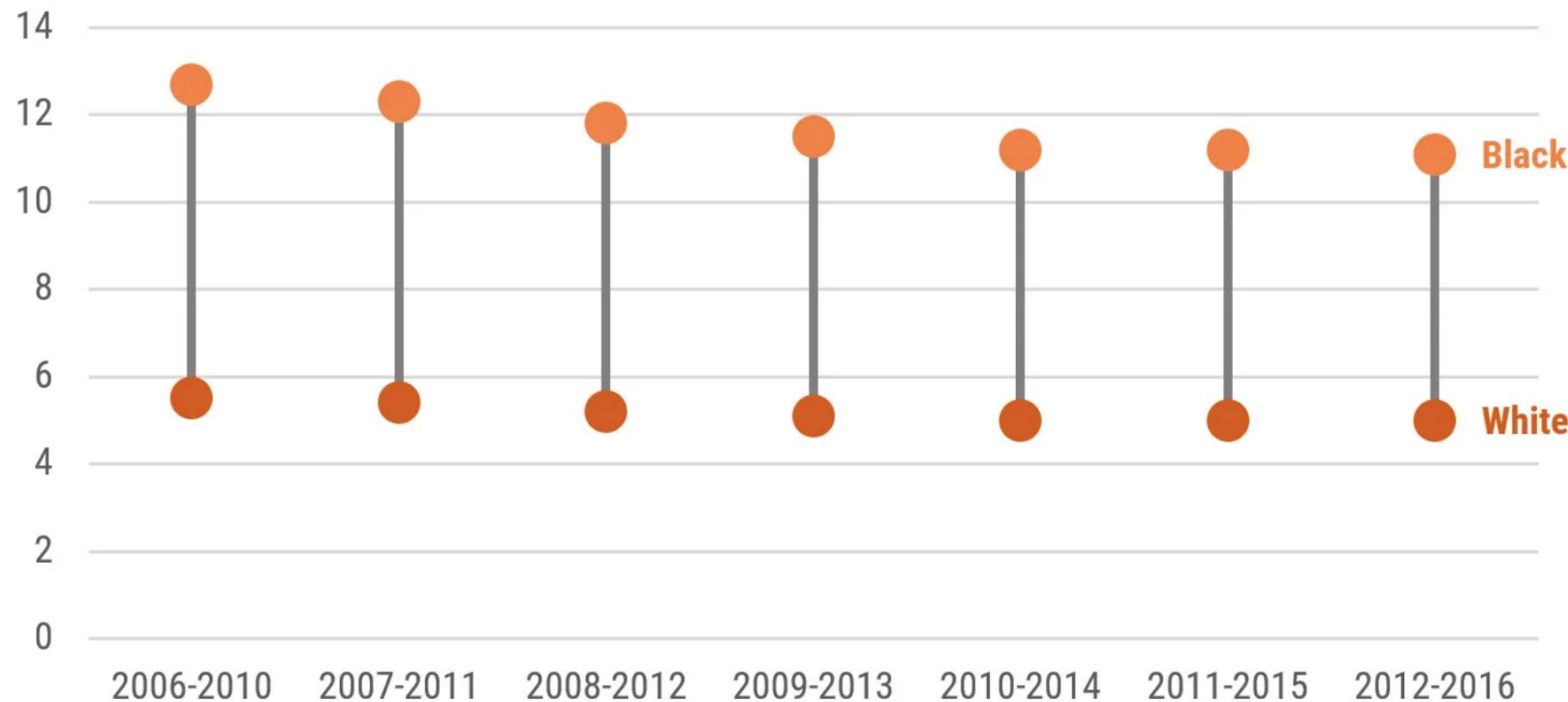
Beeswarm  
charts show  
it all!



# When you want to show disparity over time

The gap between **Black** and **White** infant mortality has only slightly narrowed over time.

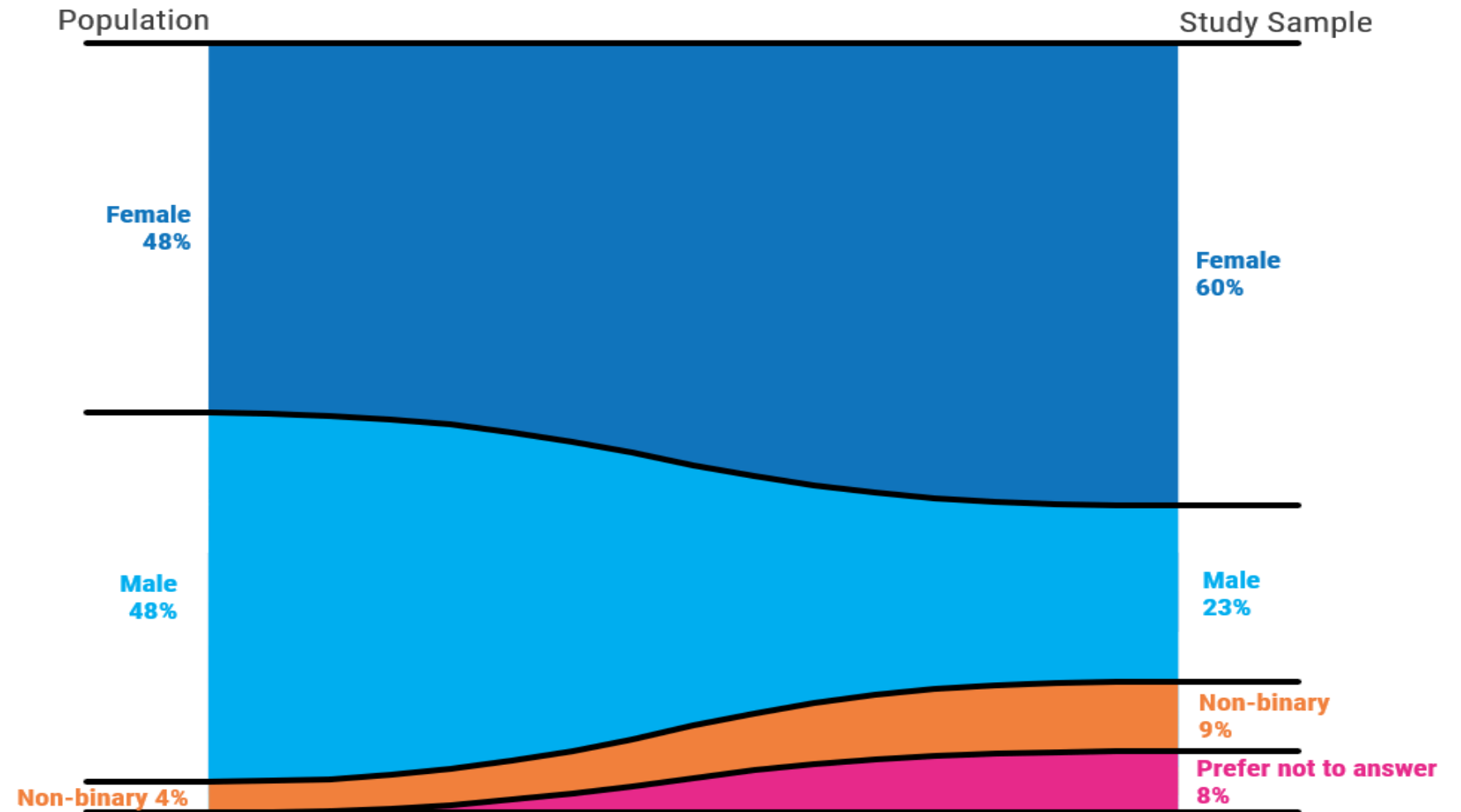
Infant Mortality per 1,000  
Data Source: KidsData.org



Dumbbell dots show how a gap shrinks, grows, persists over time.

When you  
want to  
explore a  
population's  
share across  
two metrics

Our study sample under-represents **males**.



**What's an example of a chart  
you've found useful/powerful in  
your work?**



## 4. Practices for effective data viz

We identified 1,000 HBCU alumni.

95% had valid contact information & were contacted.

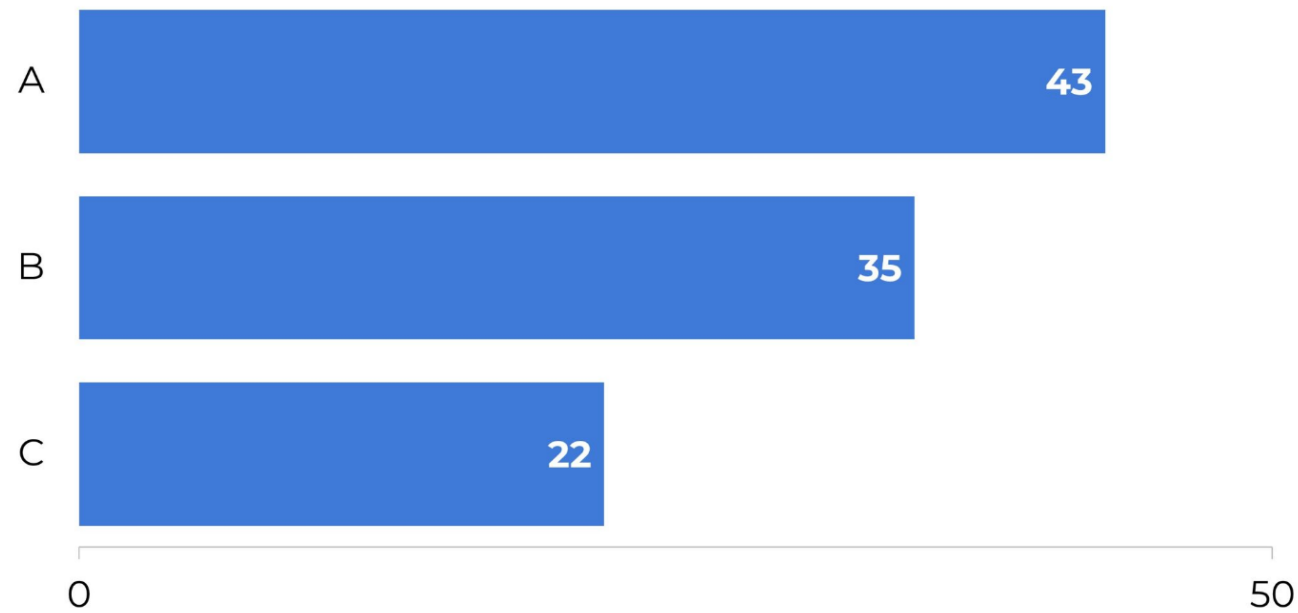
Of those, 50% clicked the link to our survey.

Among those, 75% completed the survey.

# Use an accessible (familiar) chart type

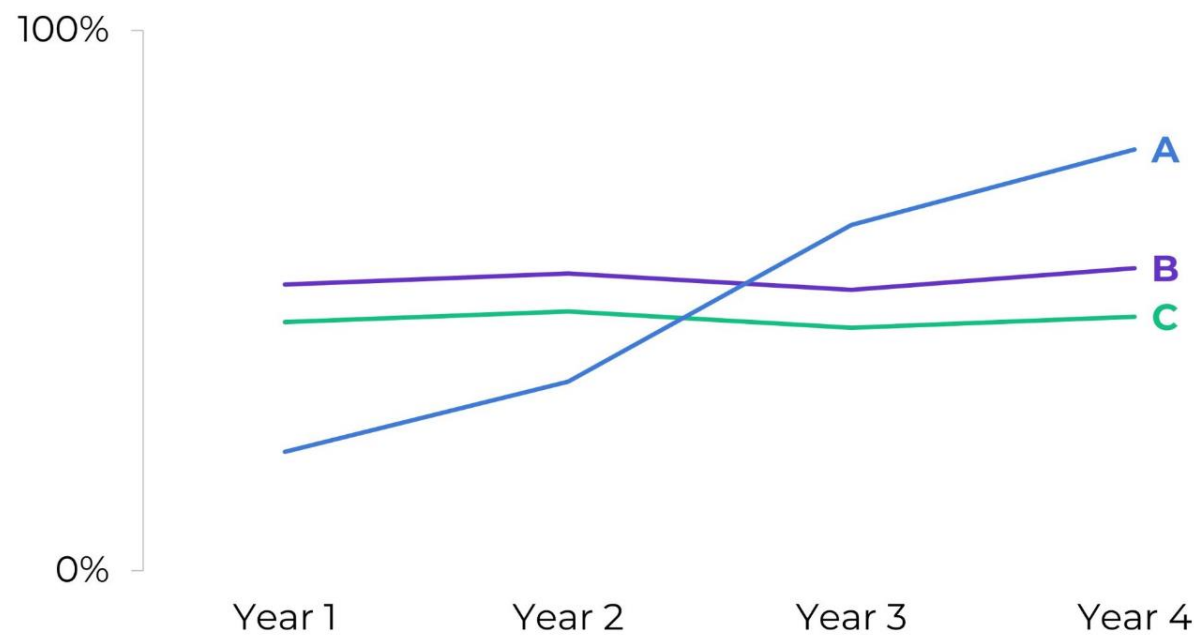
## Bars

To compare the averages or totals of several categories at once.



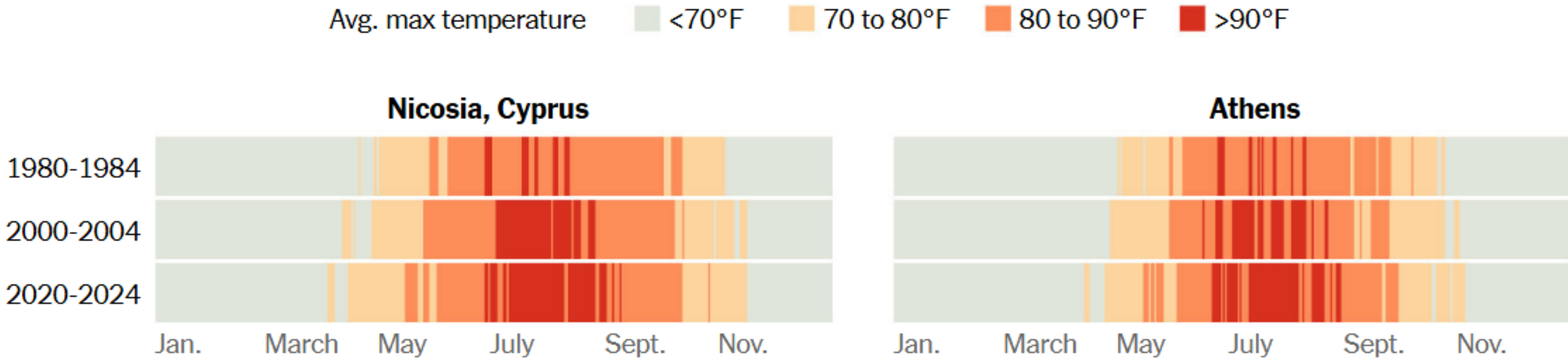
## Lines

To visualize patterns over time.

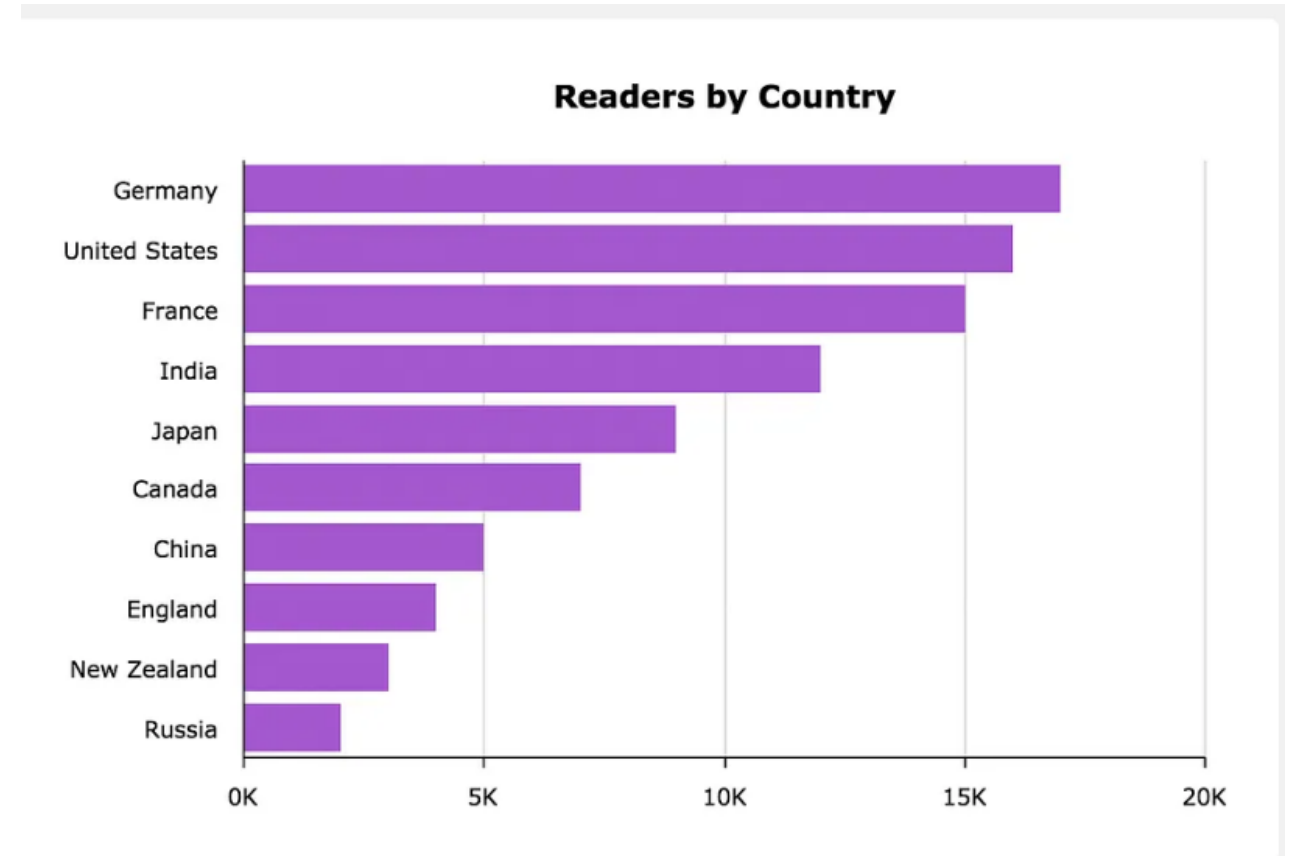
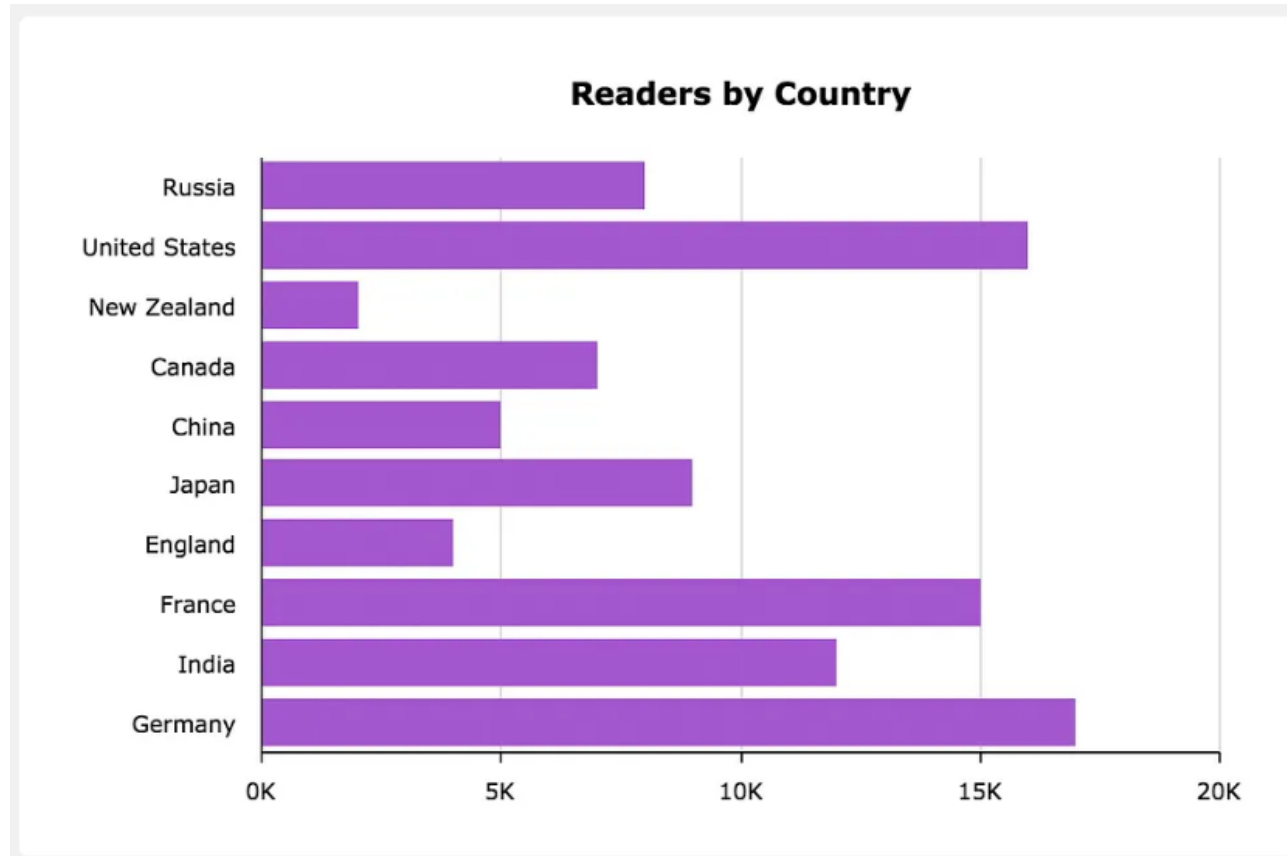


# Use a descriptive title that captures your main takeaway.

## Heat waves are getting hotter and longer in many European cities



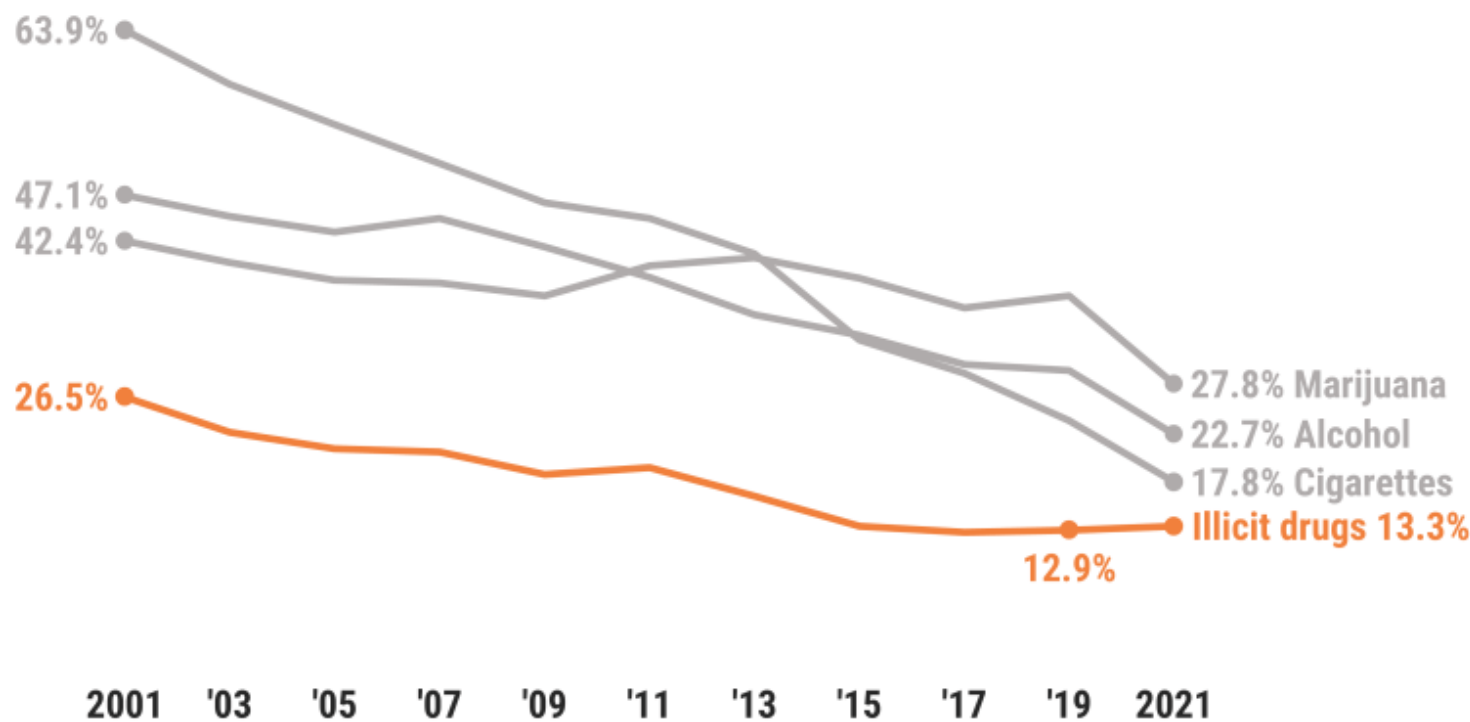
# Order the data intentionally.



# Use colour intentionally.

Most substance use by high school youth continues to decline. However, in 2021 **Illicit drug use** increased slightly.

Percentage of high school students who have used selected substances. Illicit drugs include cocaine, inhalants, heroin, methamphetamines, ecstasy, or hallucinogens.  
Source: usafacts.org



**Highlight** important elements to guide the viewer’s attention.

**Ensure colour is legible.**



# Ensure contrast is adequate.

Foreground Color

#ffffff

Background Color

#2e85ca

Contrast Ratio

3.94:1

## WCAG Compliance Results

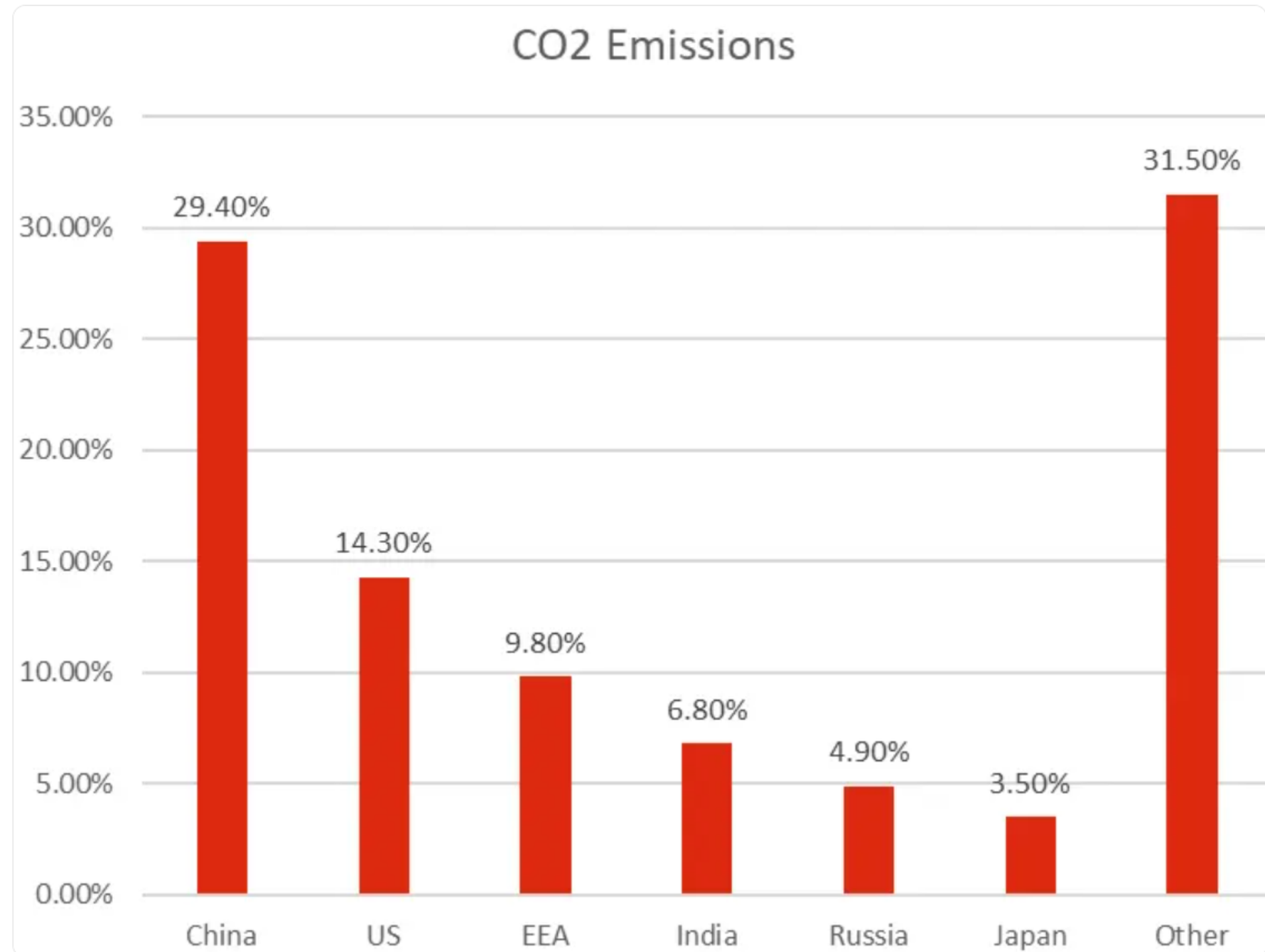
| ELEMENT TYPE  | AA     | AAA    |
|---------------|--------|--------|
| Small Text    | ✗ Fail | ✗ Fail |
| Large Text    | ✓ Pass | ✗ Fail |
| UI Components | ✓ Pass | ✓ Pass |

WCAG AA and AAA Results

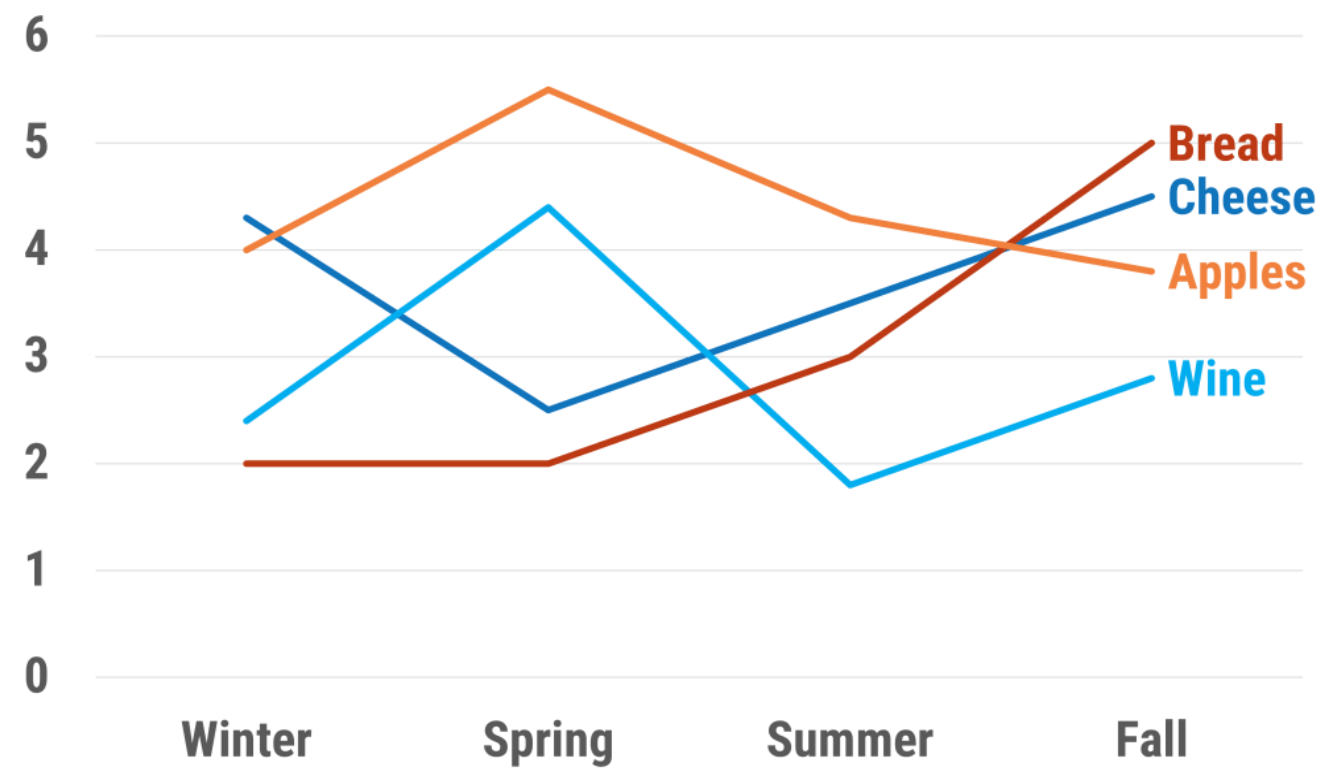
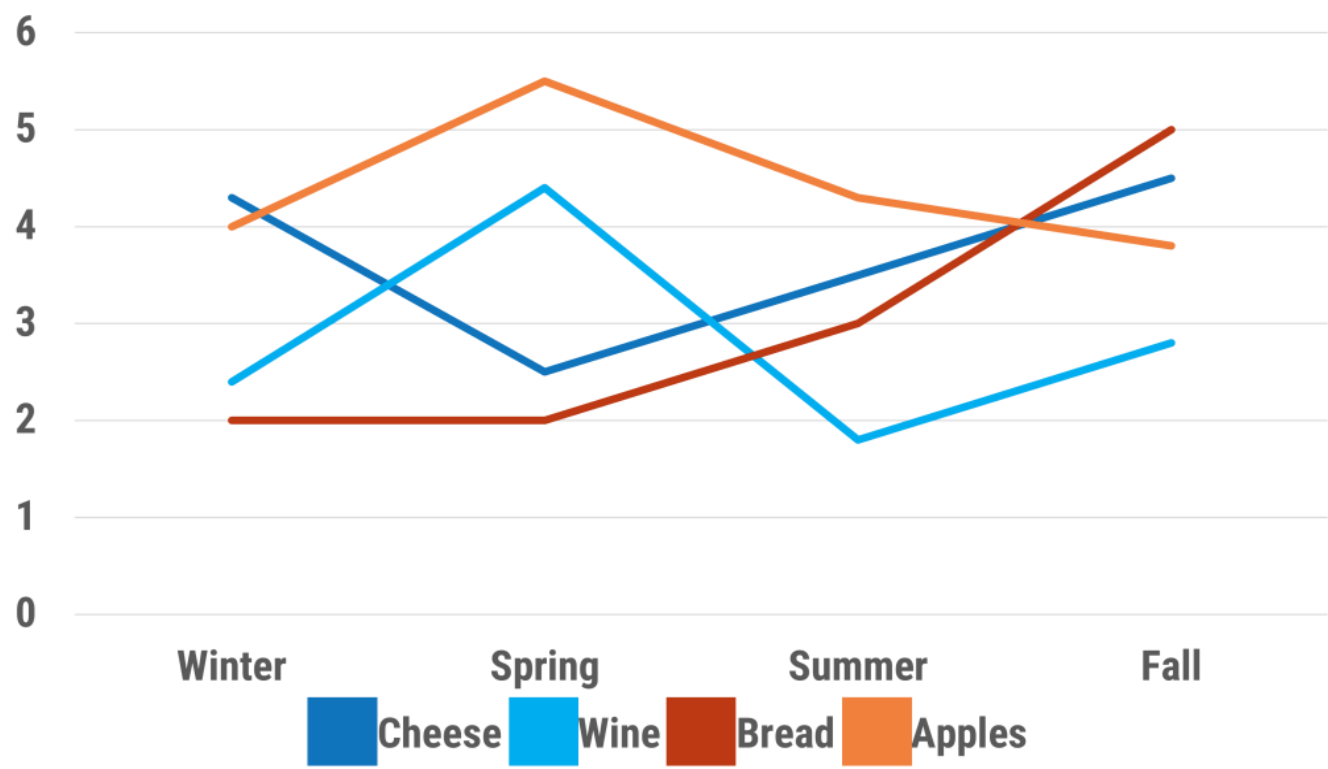
SMALL sample text: 14pt (18.5px)

LARGE sample text: 18pt (24px)

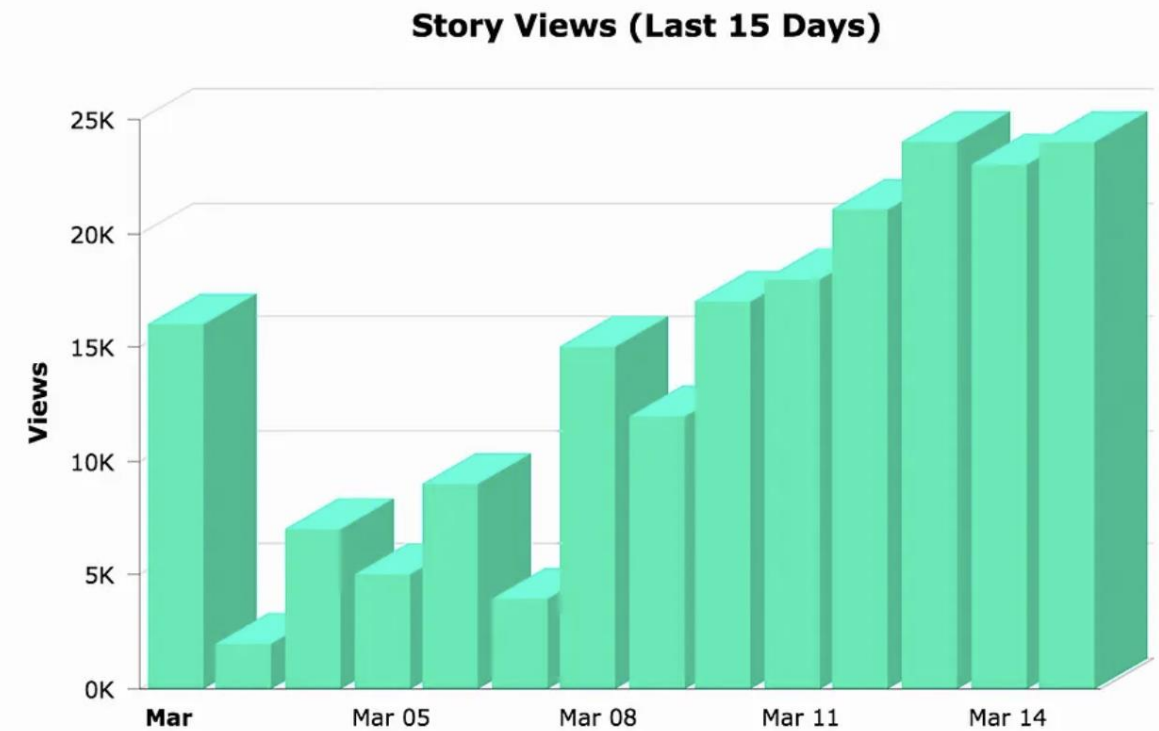
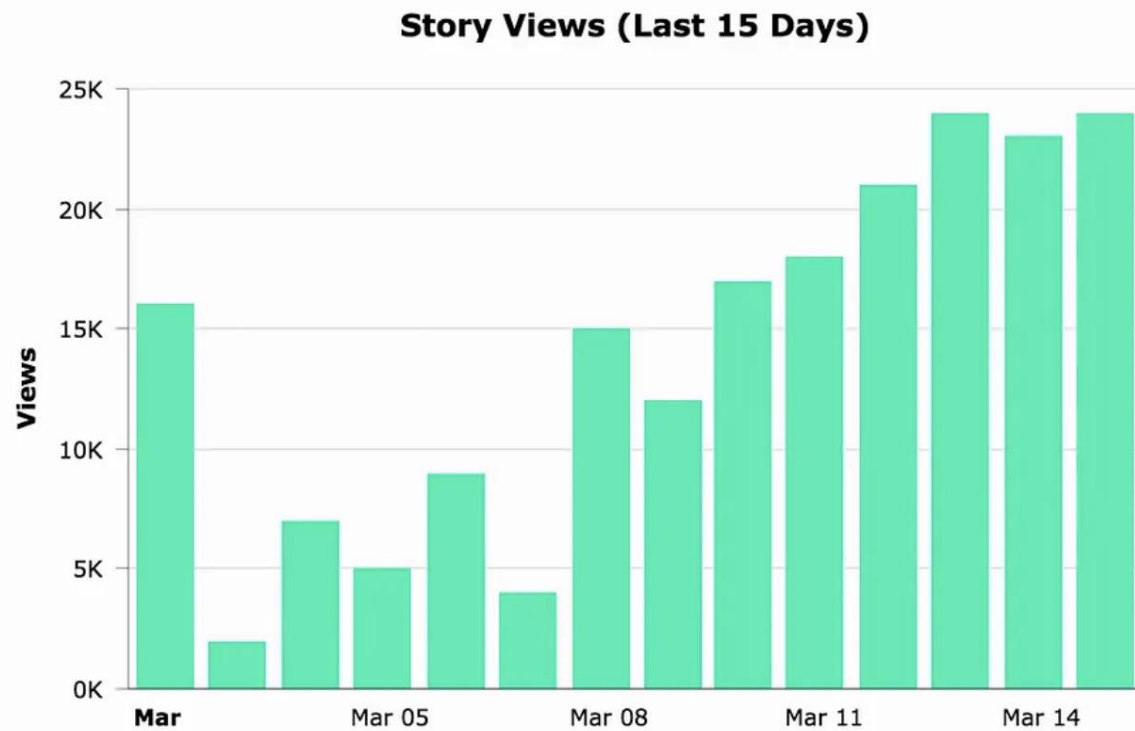
**Use axis labels  
and data  
appropriately**



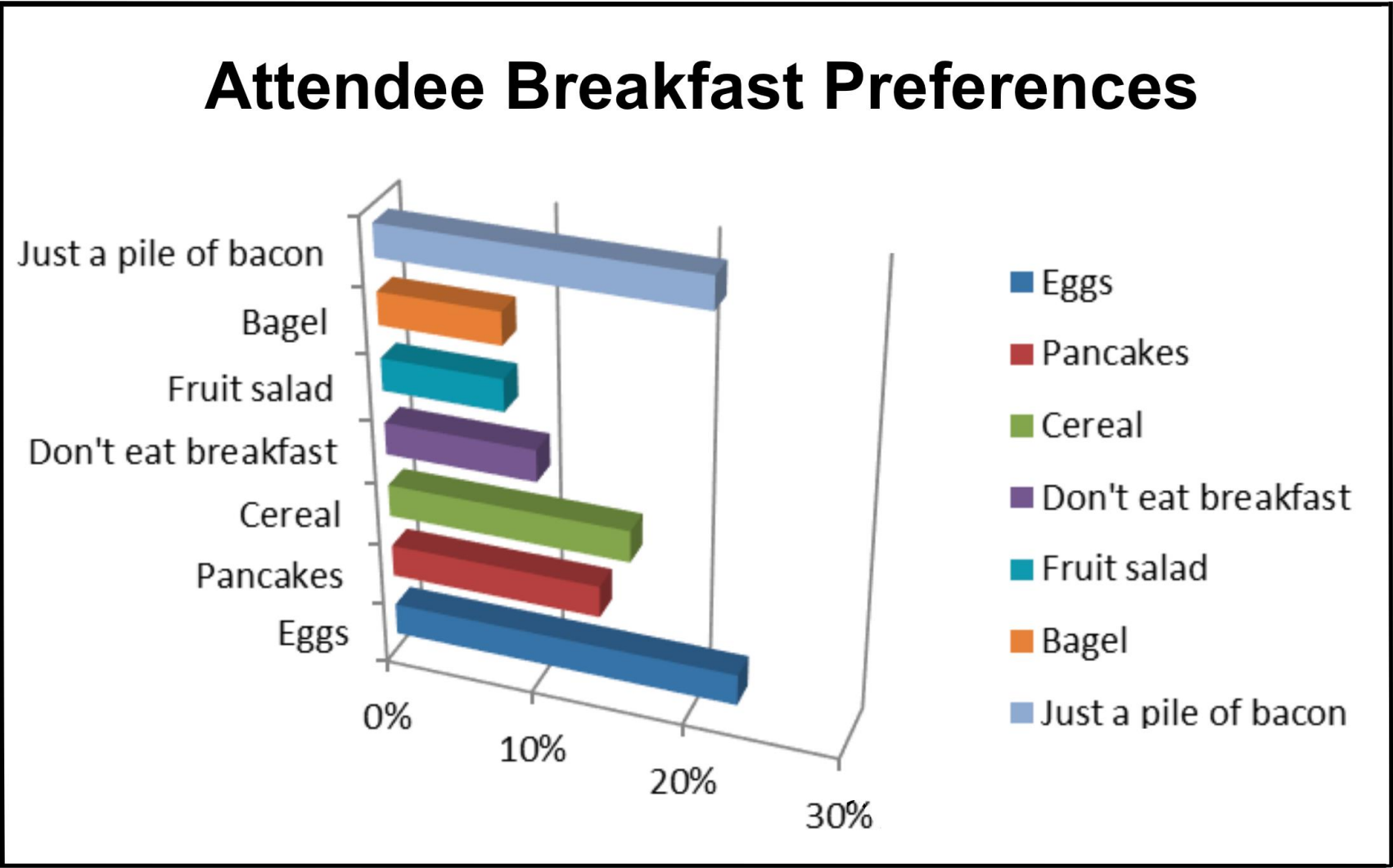
# Declutter: Avoid the use of legends.

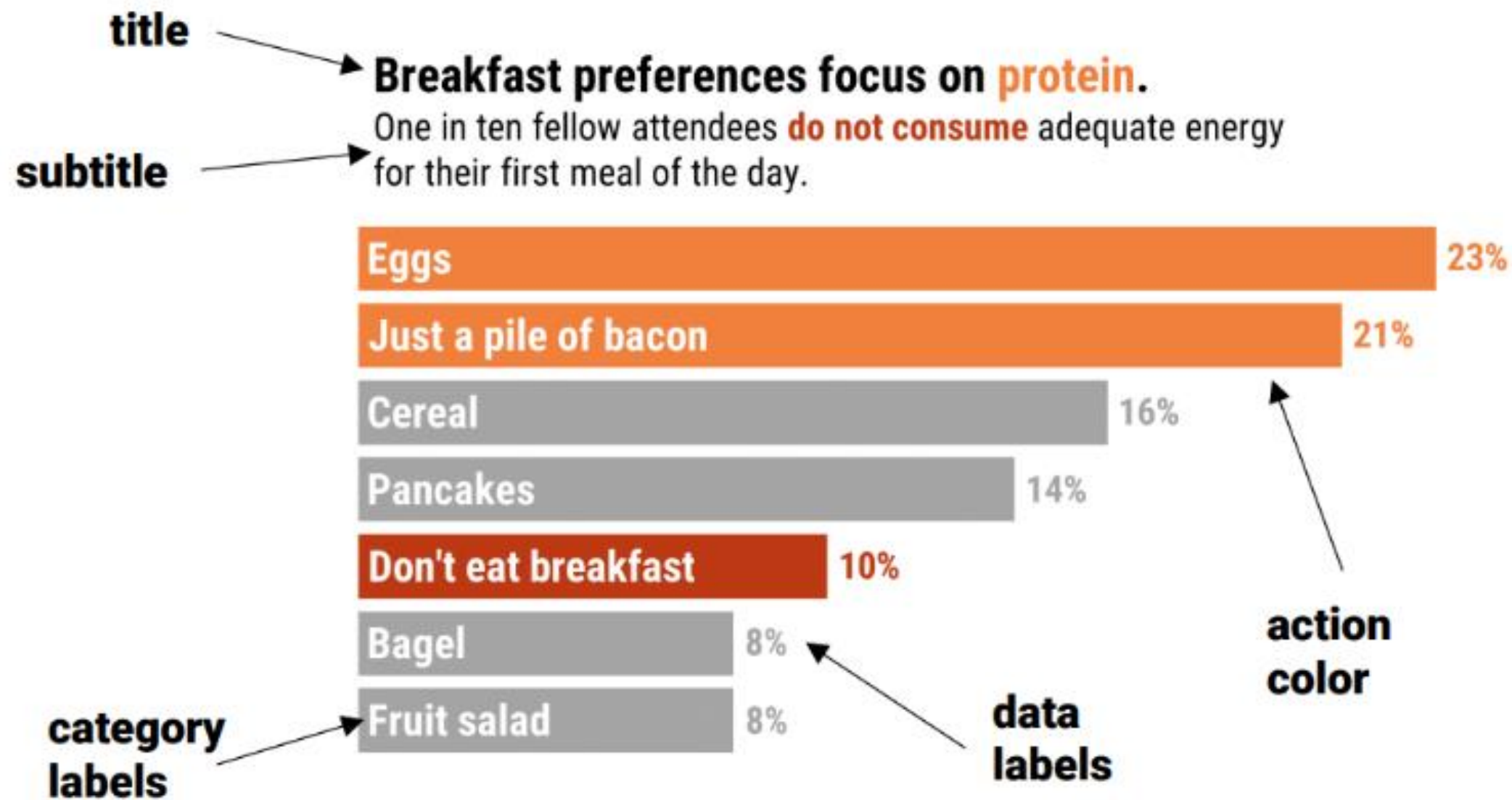


# Declutter: Avoid 3-D charts.

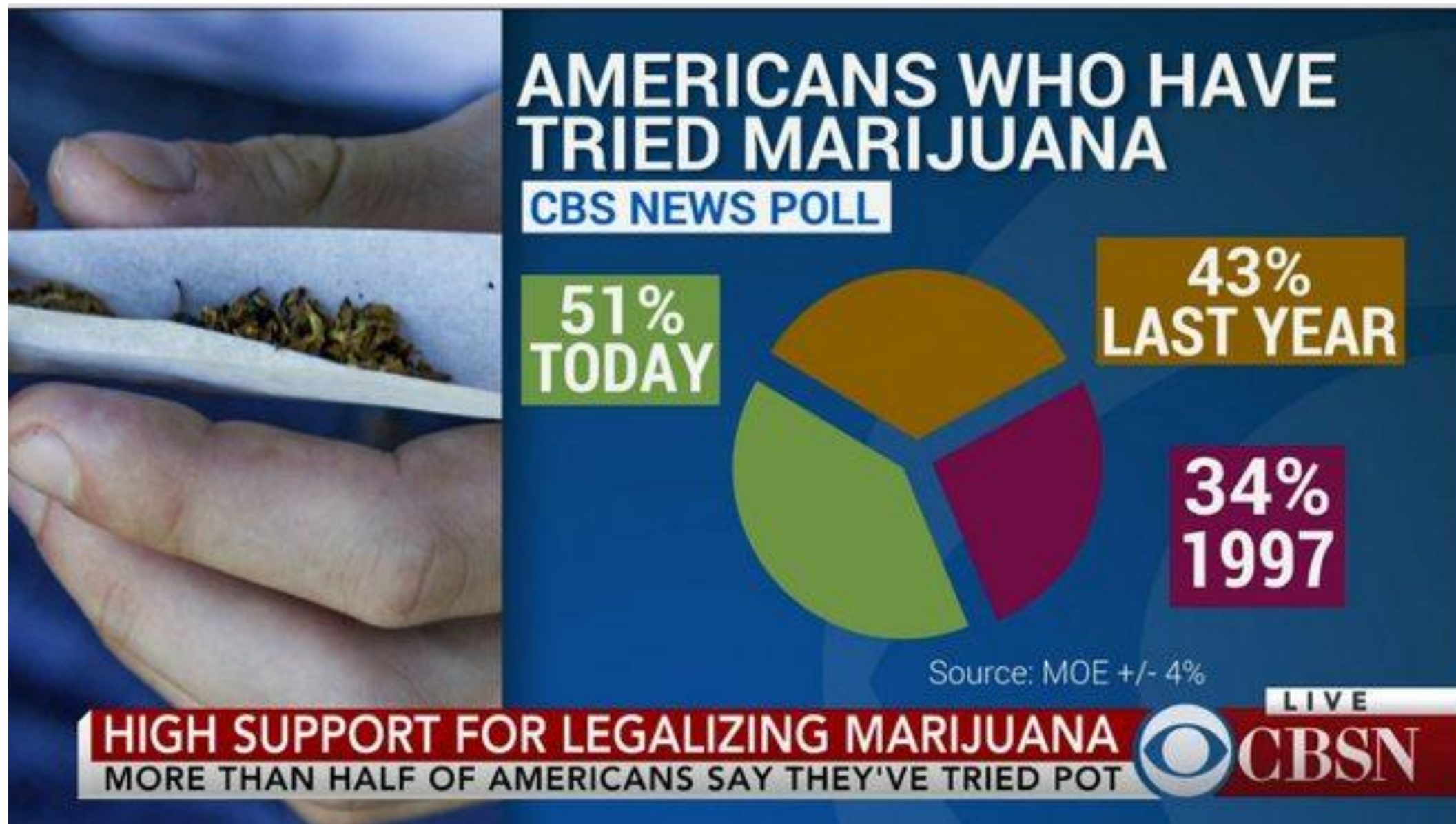


# How can this chart be improved?





Find the story and tell it clearly.



## 5. Practices for equitable data viz

- Consult with people and communities involved in your research/data project.
- Critically examine your data.
- Prioritize the needs of your audience and the rights/dignity of the people whose data you're handling.
- Use people-first language.
- Consider missing groups.
- Carefully consider colors, icons, shapes and imagery.



## 6. Disaggregate responsibly

- Disaggregate based on your research question and objectives.
- Use small cell size suppression (show  $n < 5$  or  $n < 10$ ) to protect privacy.
- Avoid use of percentages when numbers are very small.
- Use intersectional analysis only if you have adequate sample sizes. Ensure that no single person could be identified by a combination of traits.
- Interpret results with frontline staff and community.
- Avoid deficit framing and reinforcing stereotypes. Honour the people behind the charts.



# Work well with small ns

**Challenge:** How can we be inclusive in our analysis but still provide meaningful results?

- Small sample sizes in minority categories limit *statistical power*.
- Collapsing categories (e.g., Bisexual, Pansexual, Asexual) into ‘Other’ risks:
  - Erasing respondents’ self-identification
  - Reproducing harmful “norm vs. other” framing
  - Reducing accuracy by ignoring differences within groups
- Not collapsing categories:
  - Maintains integrity and respects self-identification
  - But low statistical confidence may weaken findings from minority groups
  - Risk of overinterpreting small sample data

# Accommodating small ns

- Decide how to deal with this while crafting your survey, ***before*** analysis.
- Report your results in more than one way, including collapsed, un-collapsed, and hybrid perspectives.
- Be transparent about the dilemmas, compromises and choices you are addressing with your data team, your survey respondents, and your audience.



# Dashboard demo!



# Resources

## Data viz best practices:

- Stephanie Evergreen (Evergreen Data) | [Effective Data Visualization: The Right Chart for the Right Data, 2<sup>nd</sup> Ed](#); [Data Visualization Checklist](#); [Evergreen Data Visualization Blog](#)
- Ann Emery (Depict Data Studio) | [Data viz catalogue - Charts](#); [40+ Great Graphs You Can Make in Microsoft Excel](#)
- Ryan Bales | [UX Collective | Designing Charts — Principles Every Designer Should Know](#)
- York University | [Data Visualization - LibGuides at York University](#)
- Coblis | [Color Blindness Simulator – Colblindor](#)

## Data equity in data viz:

- Urban Institute (2021) [Do No Harm Guide: Applying Equity Awareness in Data Visualization](#)
- We all Count (2020) [Keeping Data Inclusivity Without Diluting your Results » We All Count](#)

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