

Transform Spreadsheets into Stories with Data Visualization



Ann K. Emery

DepictDataStudio.com

@AnnKEmery

Transform your **spreadsheets** into **stories.**

Your research deserves to be out in the world – utilized, actionable,
and talked about – not gathering dust in spreadsheets.



Training



Data Design



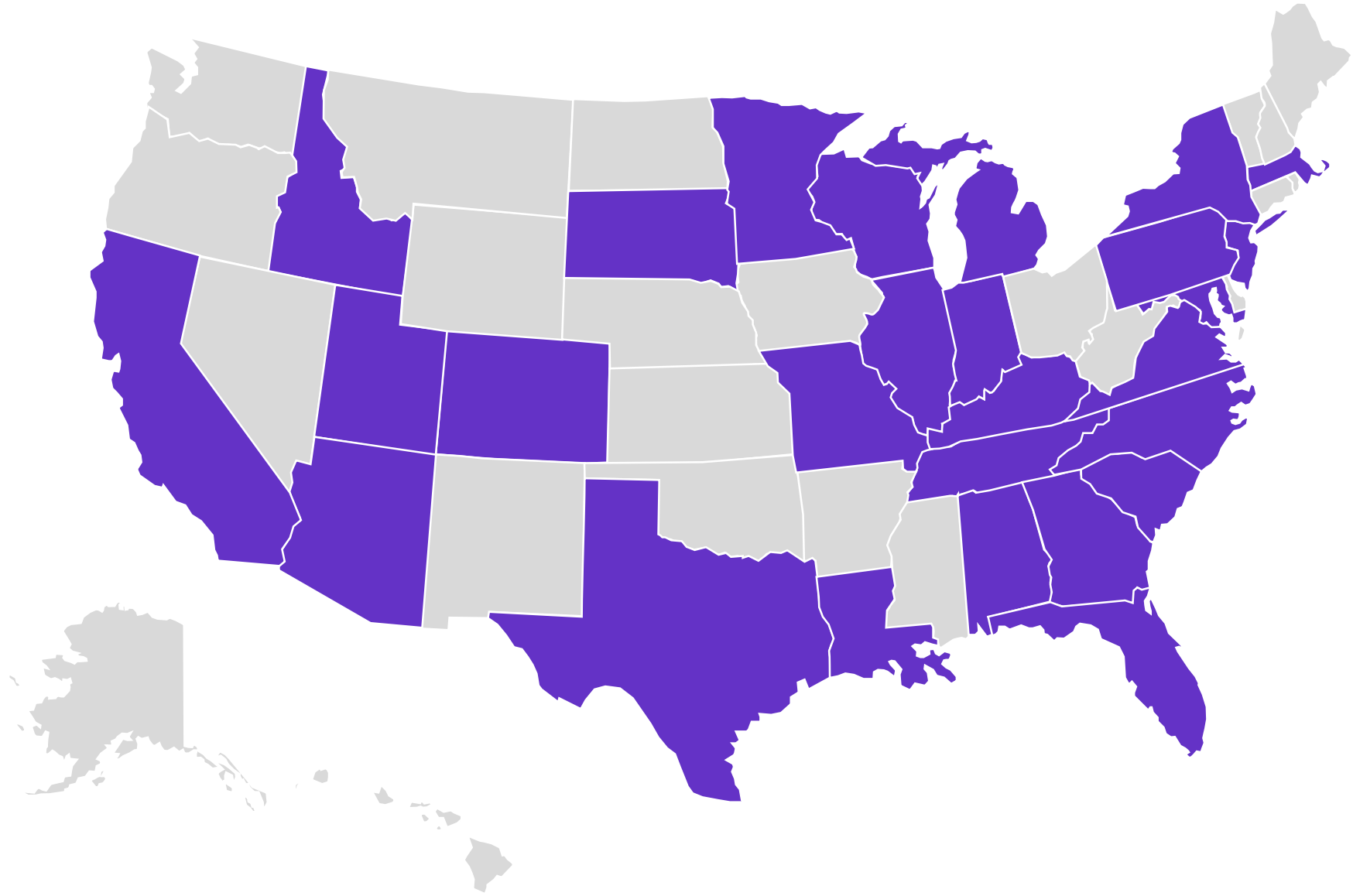
Online Coaching

[DepictDataStudio.com](https://depictdatastudio.com) learn how to transform technical findings into

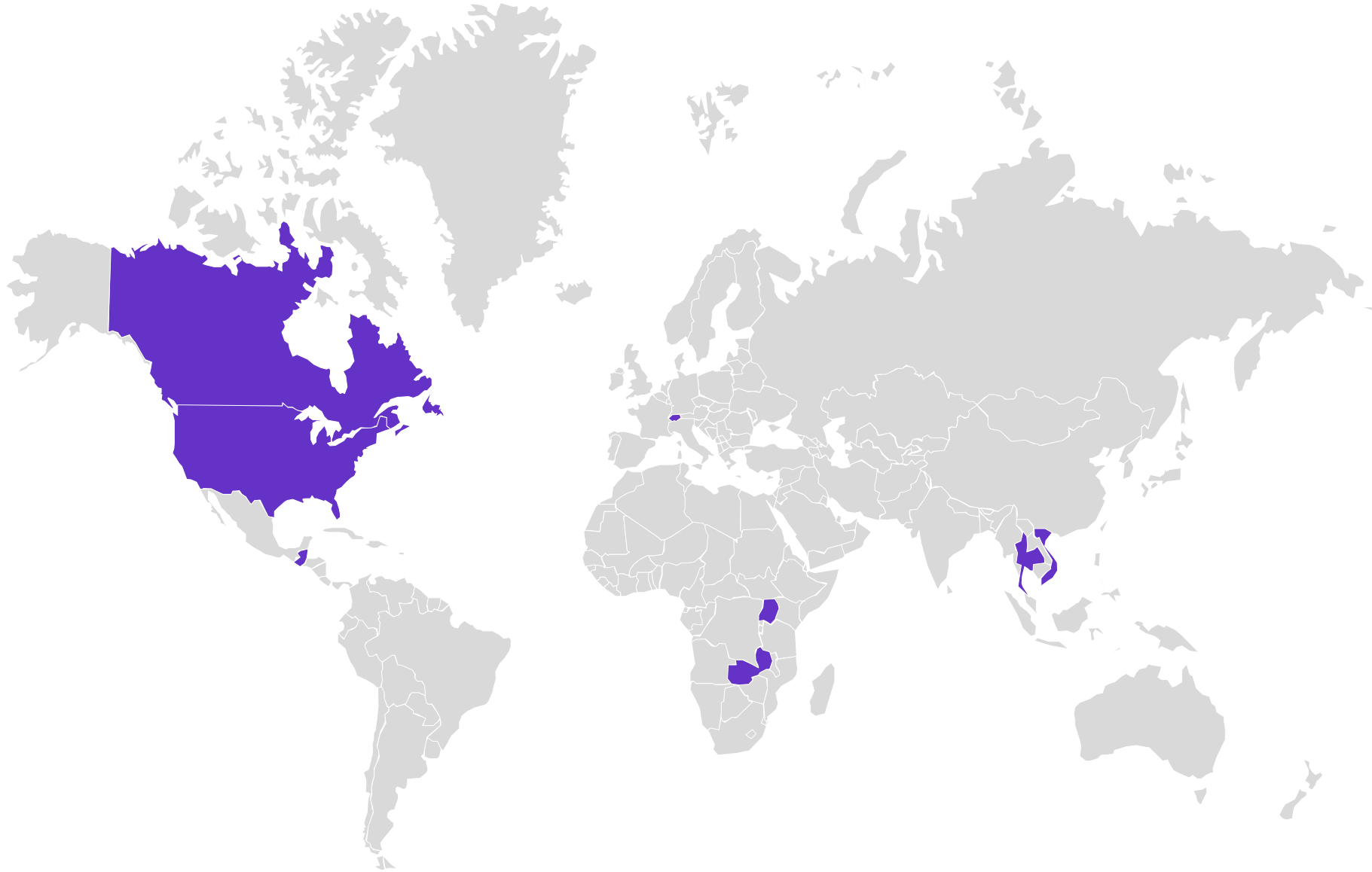
Take your data from boring to bravo! We

Connect through the magic of screensharing

Ann K. Emery



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The Challenge: Dusty Shelf Reports

April 21, 2018

Author: Sarah F. Allen
 Second Author: Robert D. Henry

abstract or abstract: **Abstract:** Depression symptoms during early adolescence may reflect prior or current problem-solving difficulties during middle adolescence. We have not established that depression is associated with social engagement, such as interpersonal alienation (Chen, Crossley, & Marx, 2013) and lower levels of family cohesion and social support (Carroll & Ryan, 1994). Similarly, depressed adolescents report poor parental relationships (Larsen, Reuter, & Diaz, 1991), including low physical affection and verbal intensity (Fard, Drape, & Berman, 2014), and poor communication with their parents (Larsen & Berman, 1996). Furthermore, Vanney and Del’Haine (2008) demonstrated that several characteristics of parent-child relationships (namely, criticism, support, monitoring, and communication) are inversely correlated with adolescent depression symptoms, with warm relations and developmental periods. Family relationships are also important in reducing depression because reported

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Depression, Relationship, and Problem-Behaviors

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Depression, Relationship, and Problem-Behaviors

Table 2
Covariates among Family Variables

	1	2	3	4	5	6	7	8	9	10
1. Adolescent depression	—	.21*	.05*	.01	.09	.01	-.01	.01	.01	.01
2. Maternal depression		—	.19*	.01	.01	.01	.01	.01	.01	.17*
3. Adolescent communication			—	.14**	.20*	.01	.20*	.01	.21**	.01
4. Communication				—	.18*	.17*	.12**	.01	.11	.22*
5. Internalizing symptoms					—	.20*	.20*	.22**	.11	.14
6. Externalizing symptoms						—	.01**	.10*	.13**	.20**
7. Alcohol use							—	.01**	.13**	.20**
8. Marijuana use								—	.13**	.01
9. Hard drugs									—	.20*
10. Suicide										—

Note: **p < .001, *p < .01, **p < .05, *p < .05.

Depression, Relationship, and Problem-Behaviors

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Depression, Relationship, and Problem-Behaviors

Table 3
Depressive Symptom Correlations at Age 17 from Adolescents and Internal Depression at Age 13

	B index	B limit	p	95% CI
Step 1: Outcome	-.11	-.18		
Outcome	.14	.19		
Statistics from step 1			.07*	.07*
Step 2: Adolescent Depression	-.13**	-.09*		
Maternal Depression	-.11	-.18		
Statistics from step 2			.004*	.004**
Step 3: Adolescent + Maternal Depression	.01	.11		
Statistics from step 3			.00	.004*

Note: **p < .001, *p < .01, **p < .05, *p < .05.

Depression, Relationship, and Problem-Behaviors

Table 4
Depressive Symptom Correlations at Age 17 from Adolescents and Internal Depression at Age 13

	B index	B limit	p	95% CI
Step 1: Outcome	.04	.07		
Outcome	-.20	-.23		
Statistics from step 1			.04	.04
Step 2: Adolescent Depression	.20*	.21*		
Maternal Depression	.20*	.21*		
Statistics from step 2			.004*	.004*
Step 3: Adolescent + Maternal Depression	.28	.28		
Statistics from step 3			.01	.01

Depression, Relationship, and Problem-Behaviors

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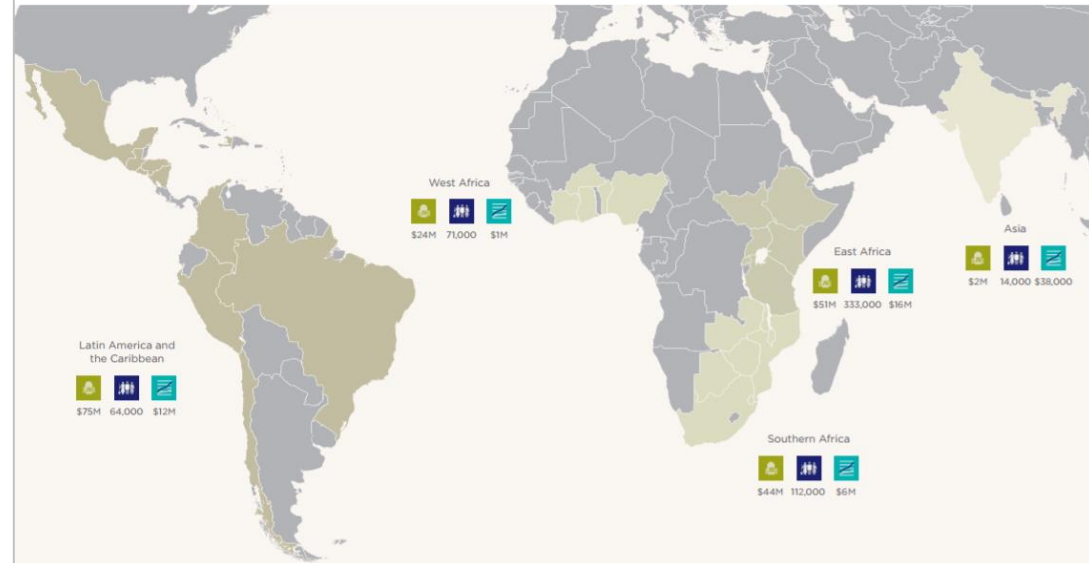
The Challenge: Dusty Shelf Reports



The Challenge: Dusty Shelf Reports

Our Regional Impact

We work in 29 countries in five regions around the world, designing and implementing projects that are tailored to local markets and aim to foster more inclusive economies. This map shows our impact across the regions for our three key indicators.



We Build Lasting Solutions

TechnoServe links people to the information, capital themselves out of poverty for their families and interventions for greatest t the farmers and ue to reap financial ve project ends.

ide hands-on training in ricultural practices that apply season after season ain higher quality and grow ds. We deliver business nd skills training to entre- that help them sustainably air enterprises for years . We connect farms and es with financing they can to access in the future. help broker relationships farmers and buyers that commercially viable and ong-term value for all players.

5 Impact Report focuses on ainability of TechnoServe's h and the methods we use re ongoing impact. We u to explore the results of formative work and learn out our lasting solutions.

2016 Impact Results



OUR WORK IMPROVES FARMERS' LIVELIHOODS

TechnoServe's projects target crops for home and local consumption as well as crops intended for export markets, depending on our assessment of the local economy and needs. When farmers increase their yields for crops such as maize, they have more to eat and more to sell. For export crops like coffee, the extra income we help farmers generate allows families to purchase more food and make other investments in their well-being.

Financial benefits in 2016, sized by amount and disaggregated by sector



A FARMER SUSTAINABLY INCREASES HIS INCOME

In northern Mozambique, cashew farmer Carlos Lassimo joined TechnoServe's MozaCaju program and learned good agronomy practices, such as pruning and cleaning, that have increased his trees' productivity. We connected him with agricultural inputs so he could grow and provide seedlings to expand cashew farms in the community. The project also provided business training and helped Carlos organize with other farmers to aggregate his harvests and sell at higher prices.

After the project ends, Carlos will continue to sell as part of his farmer group. The improved farming practices he has adopted will help his cashew trees thrive, and in three years his seedlings will have matured into productive trees leading to a sustained increase in yields and income for years to come.



**Analyze
Your
Audience**



**Choose
the Right
Chart**



**Select a
Software
Program**



Declutter



**Clarify
with Color**



**Clarify
with Text**

Take Notes!



Take Notes!

- *Add icons to increase memorability.*
- *Try a hex map to avoid the Alaska Effect.*
- *Avoid ALL CAPS because it takes longer to read.*



Take Notes!

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The Most Important Planning Consideration

**Are Viewers
Expecting
a Story?**

Are Viewers Expecting a Story?

Traditional

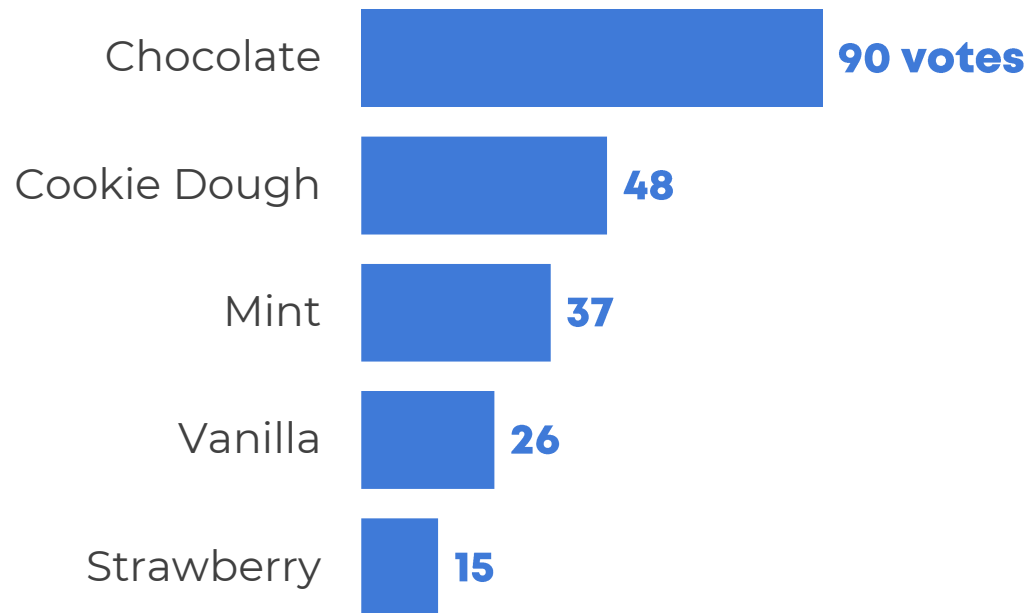
Storytelling

Are Viewers Expecting a Story?

Traditional

Storytelling

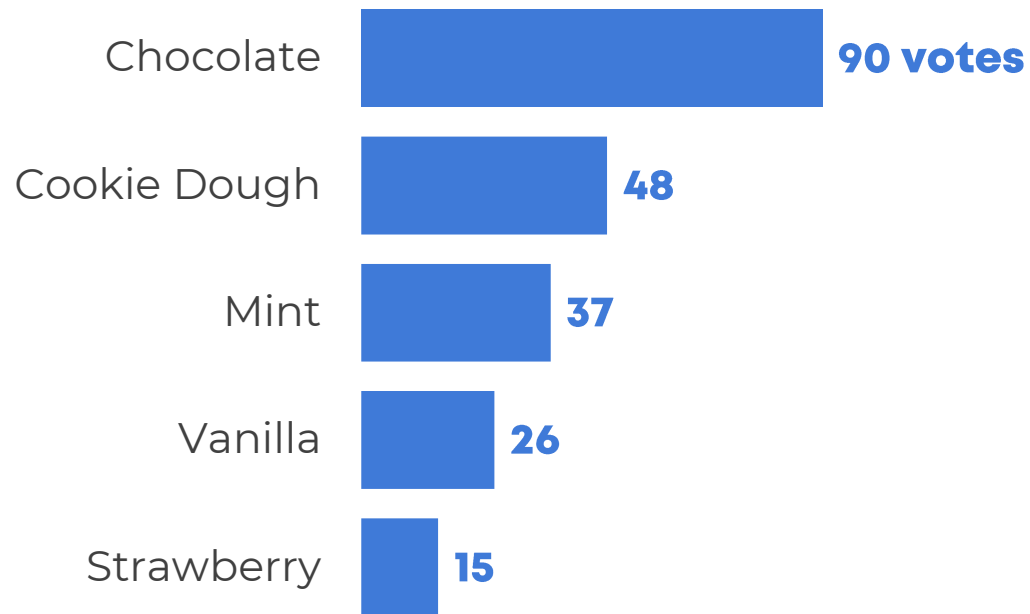
Figure 2. Ice cream flavor preferences based on 2018 survey of 216 elementary school students



Are Viewers Expecting a Story?

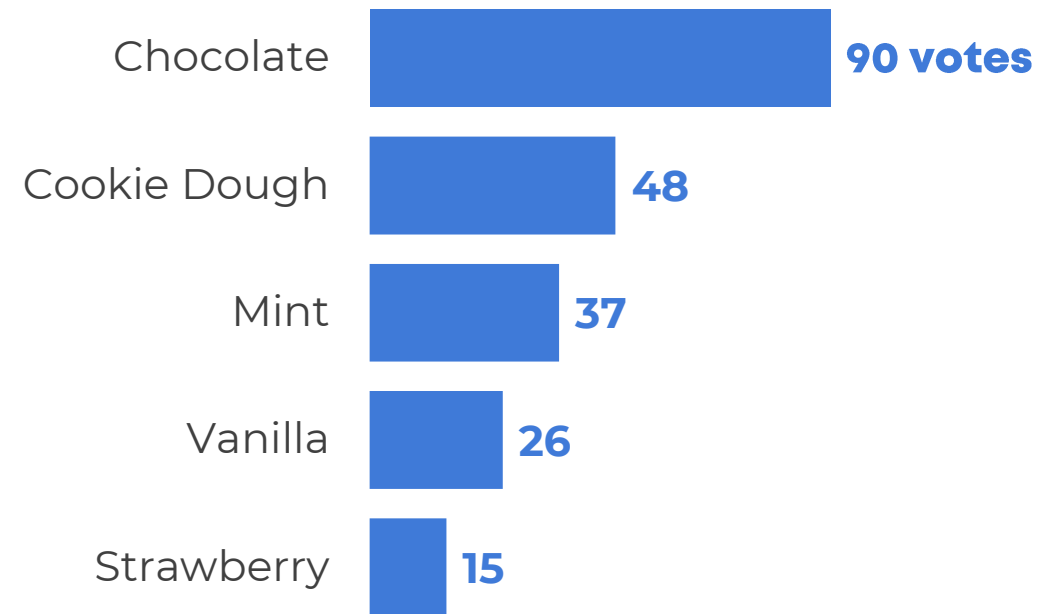
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Figure 2. Ice cream flavor preferences based on 2018 survey of 216 elementary school students



Storytelling

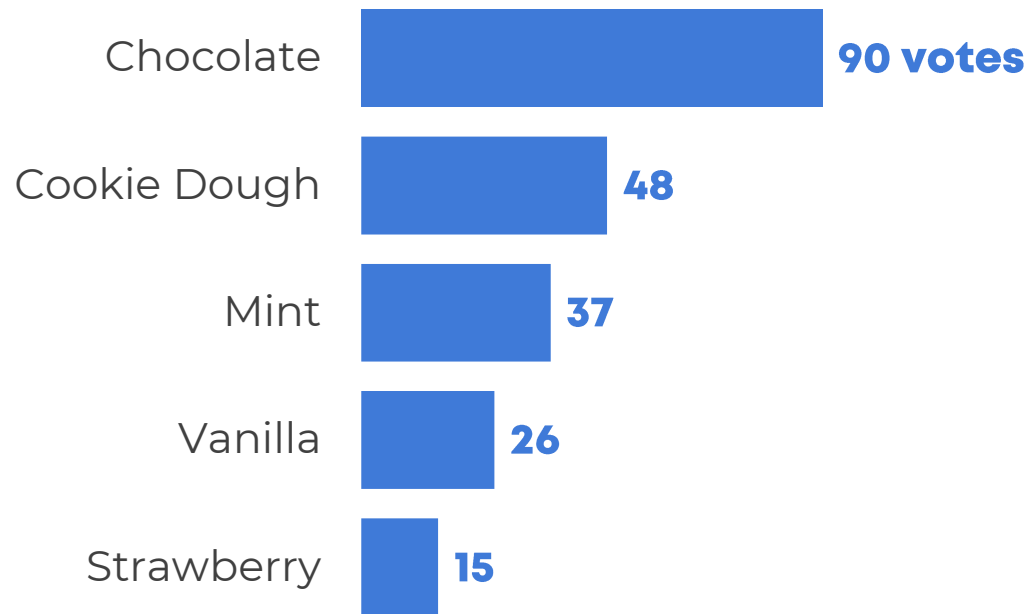
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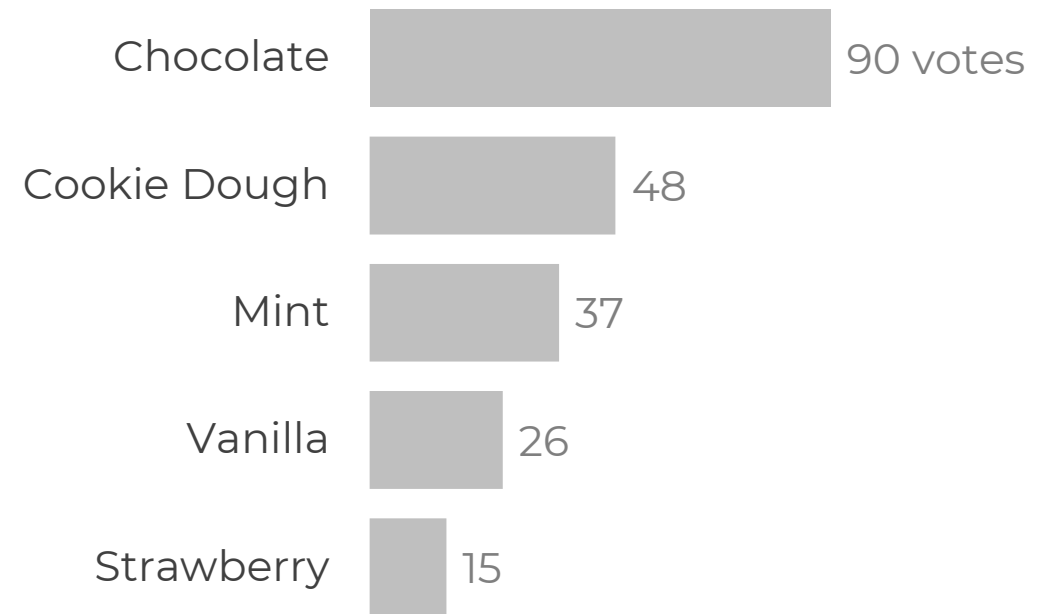
Traditional

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Storytelling

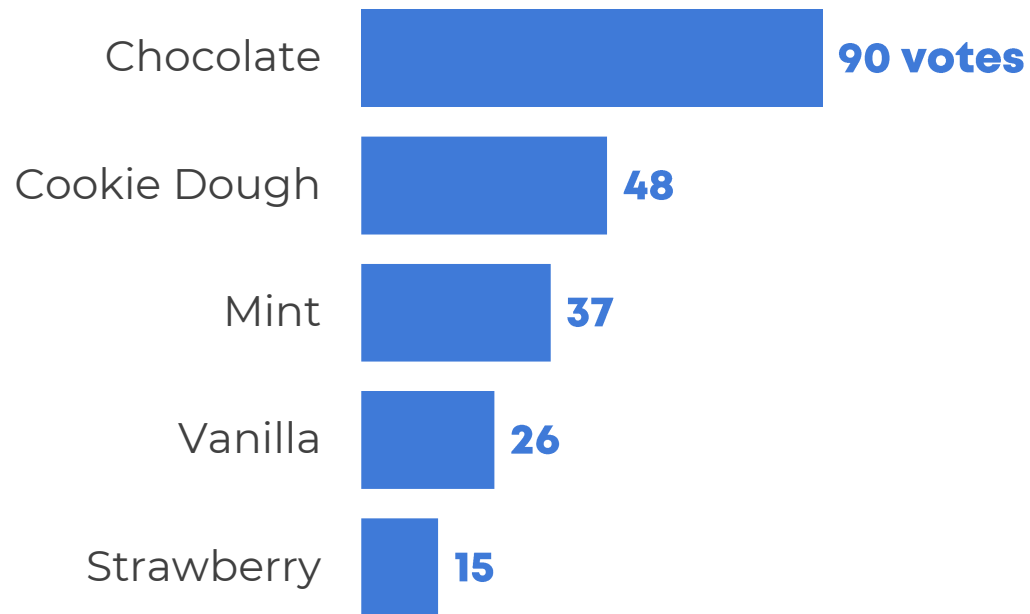
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Are Viewers Expecting a Story?

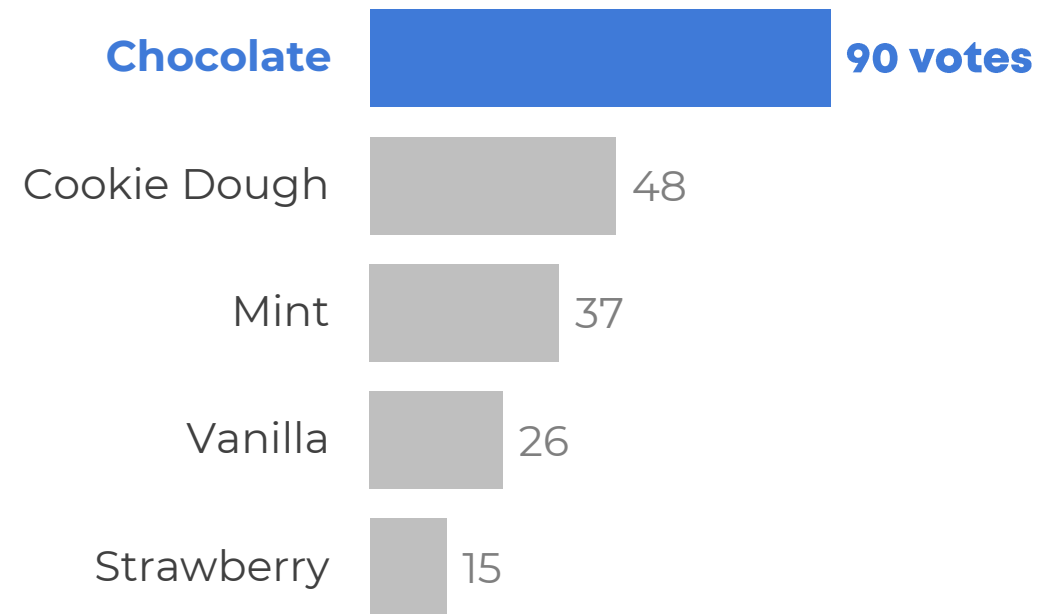
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Storytelling

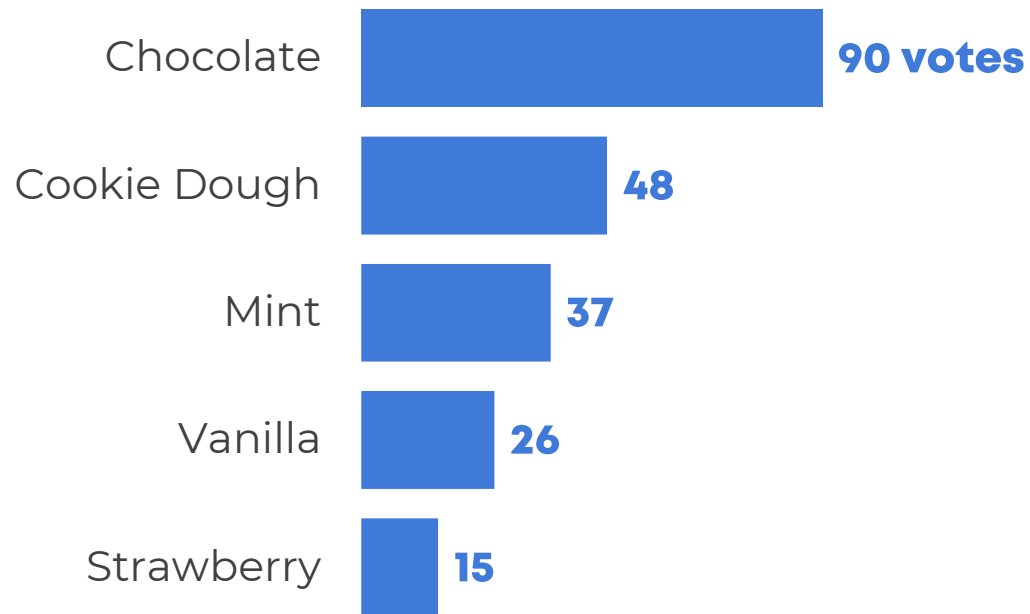
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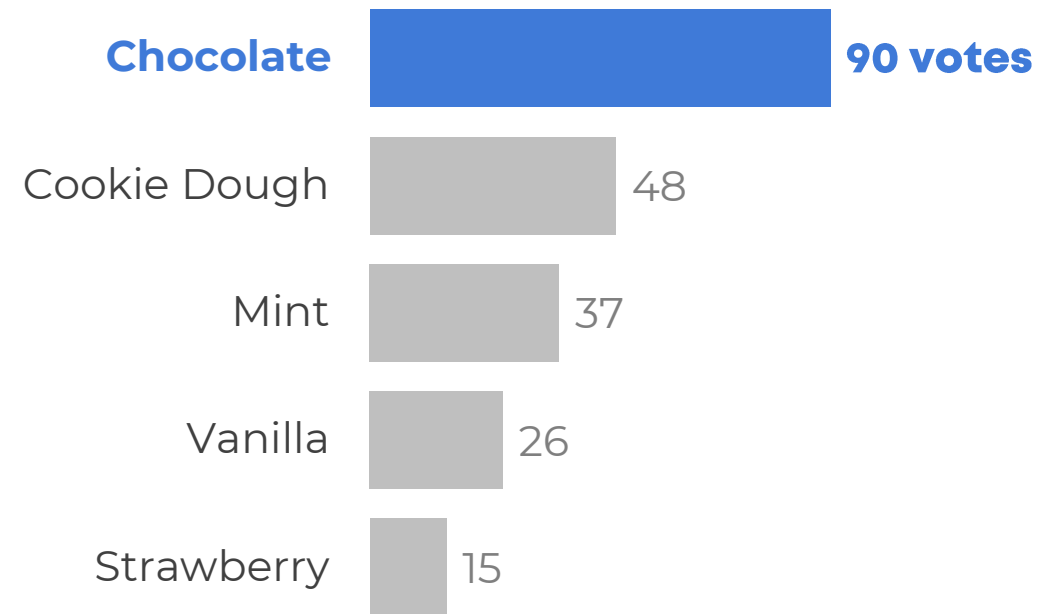
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Storytelling

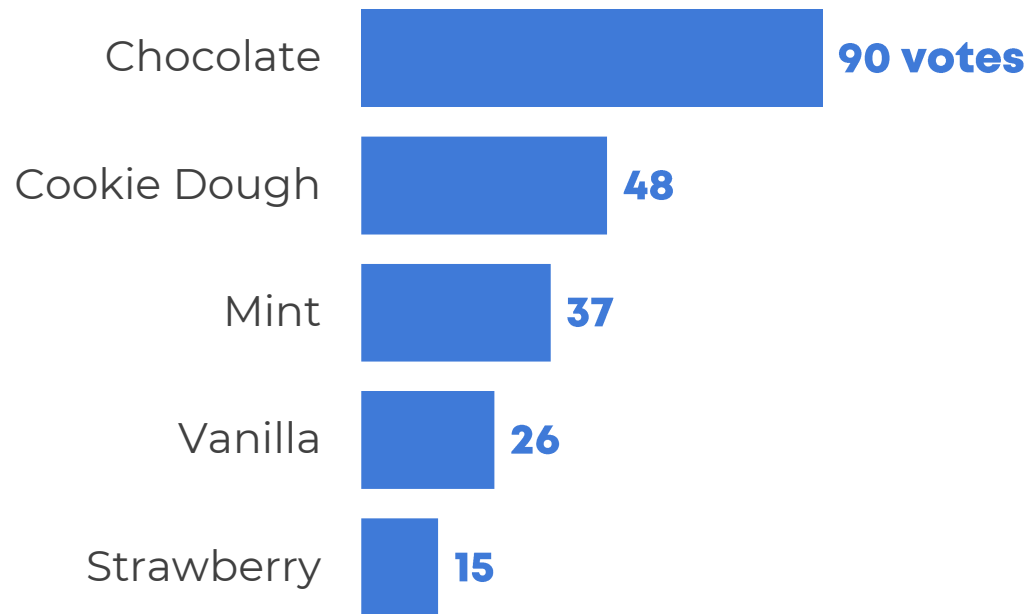
Chocolate was the most popular ice cream flavor among the 216 students who voted in the survey



Are Viewers Expecting a Story?

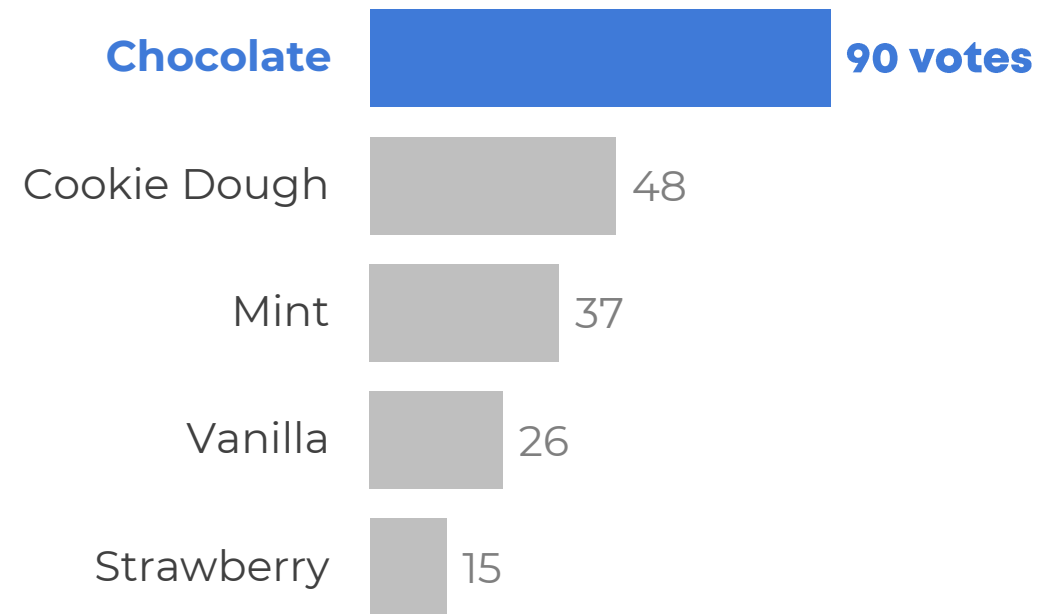
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Storytelling

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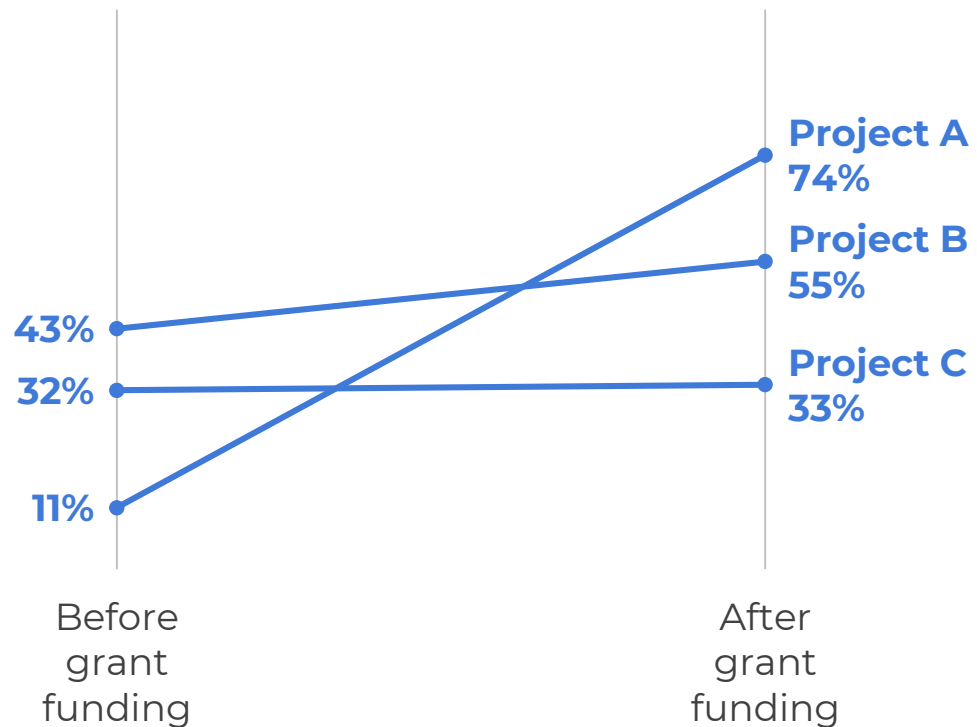


Are Viewers Expecting a Story?

Traditional

Storytelling

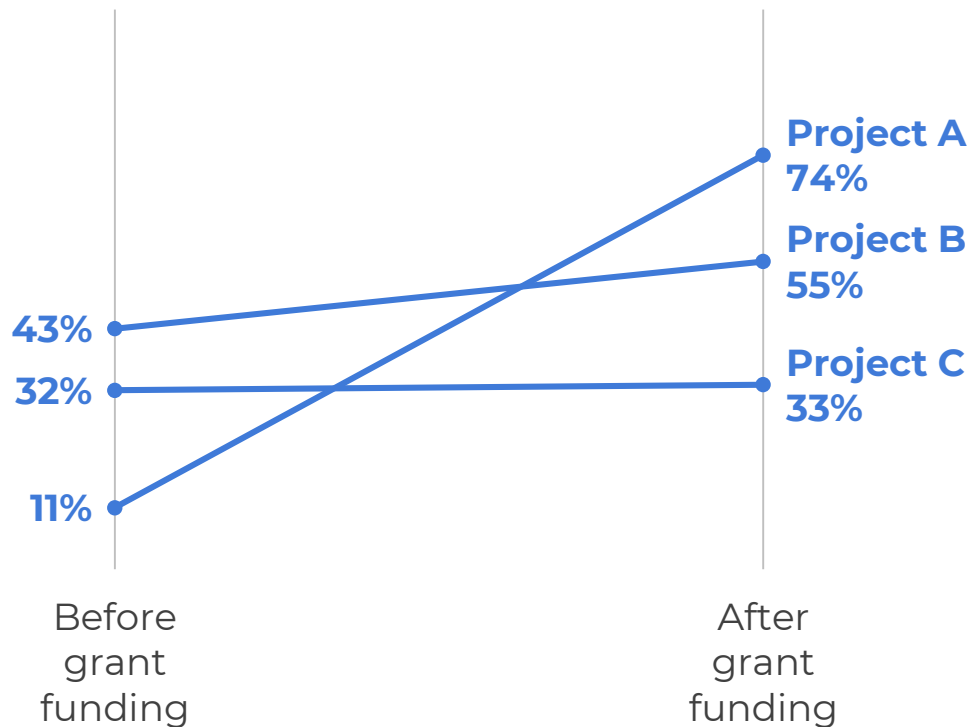
Figure 2. Project Results Before and After the Four-Year Grant Funding



Are Viewers Expecting a Story?

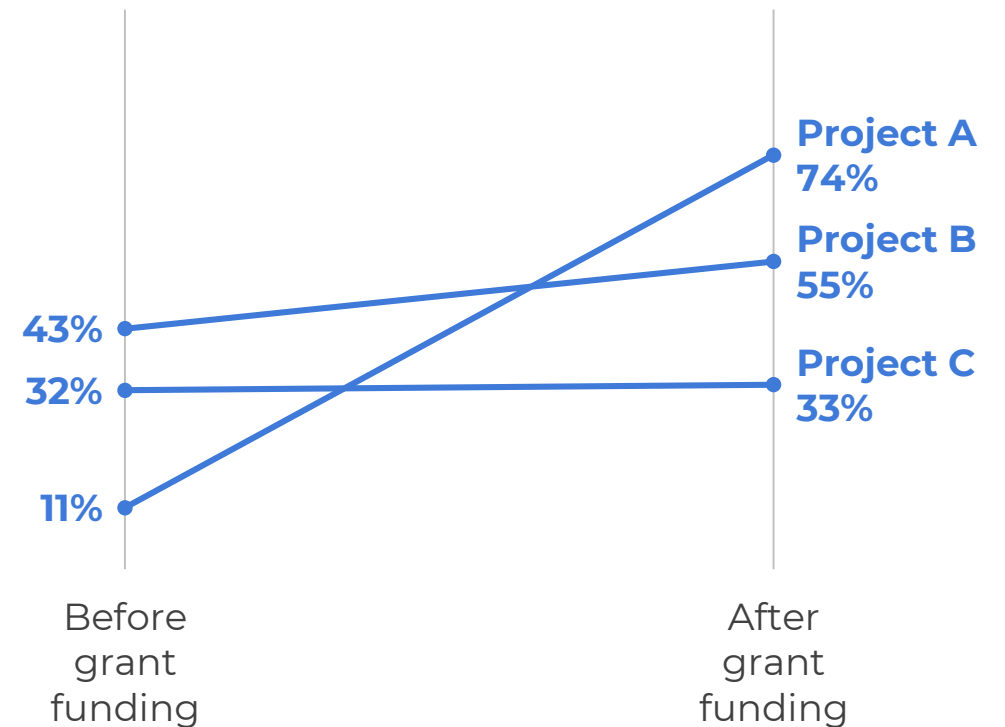
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Storytelling

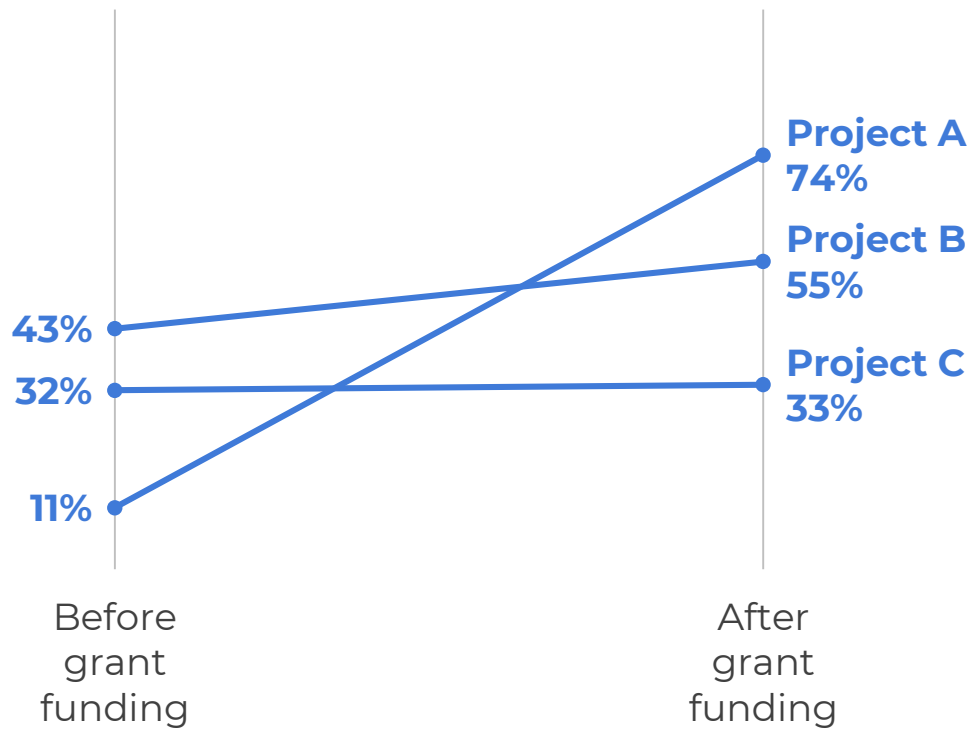
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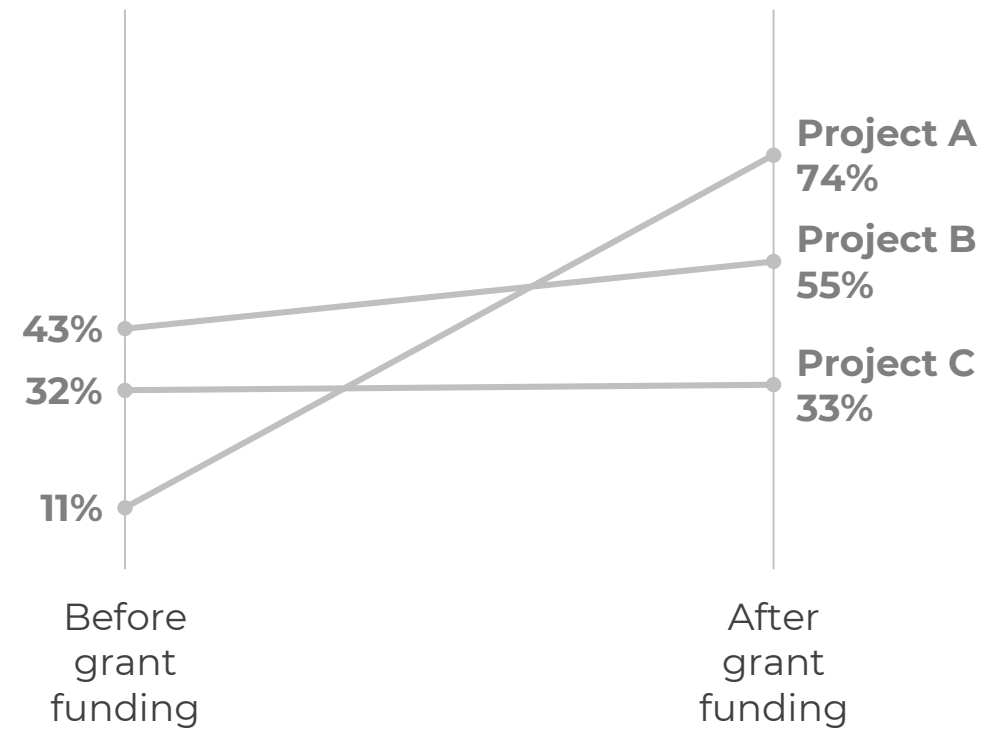
Traditional

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Storytelling

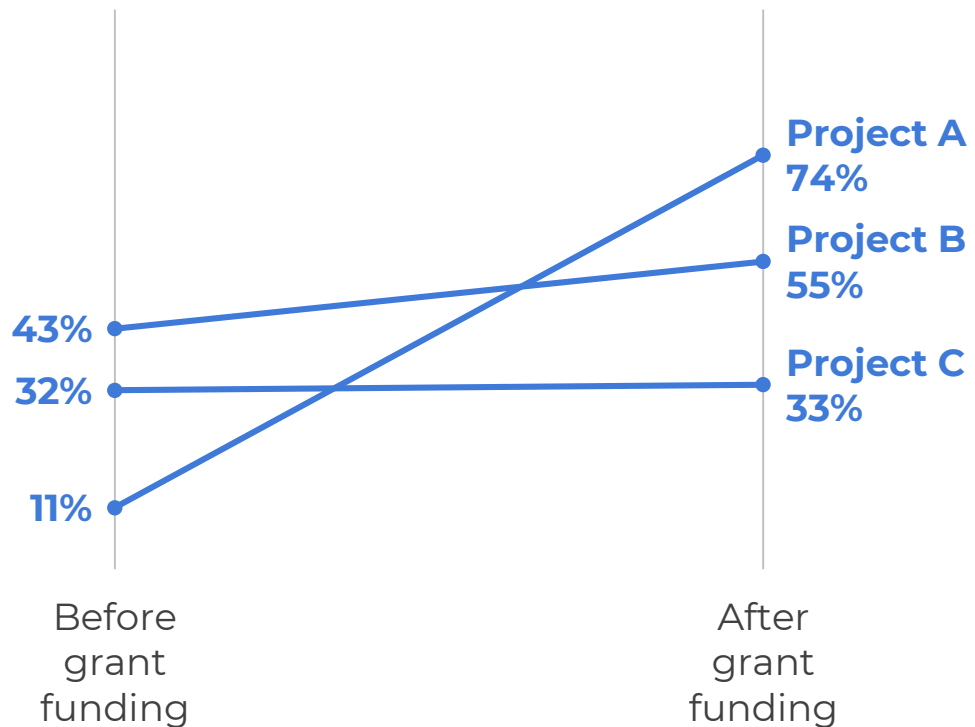
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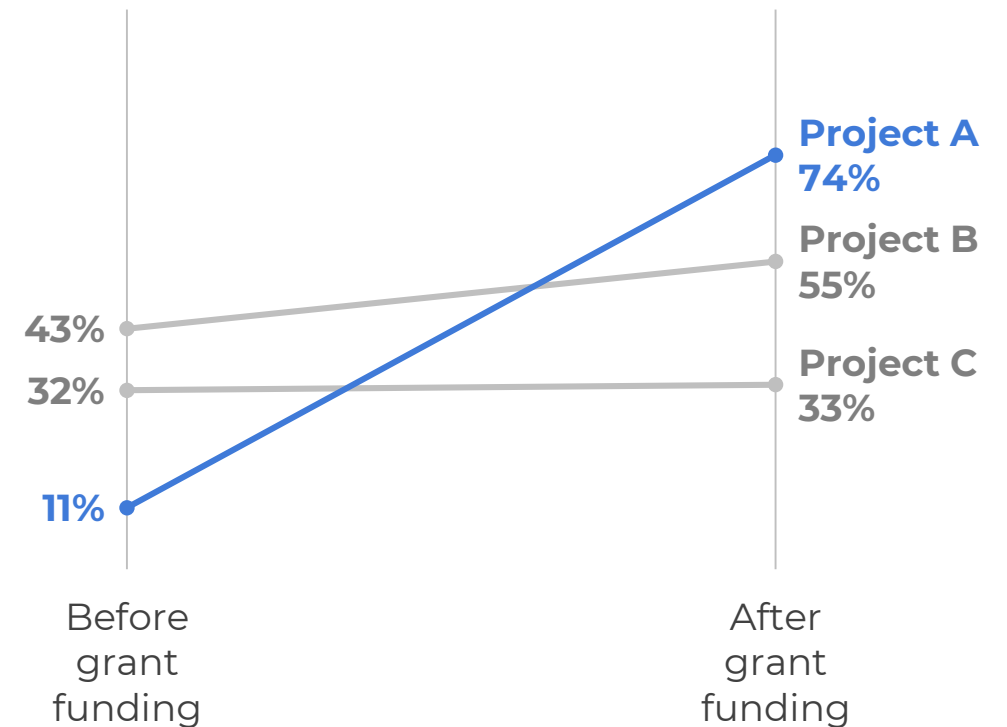
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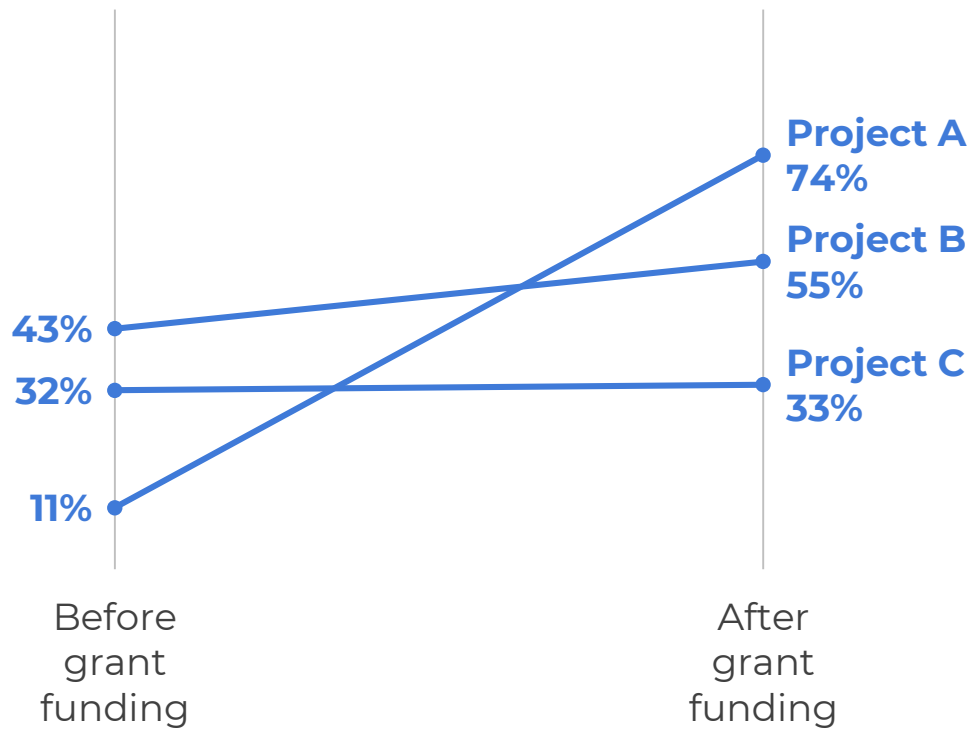
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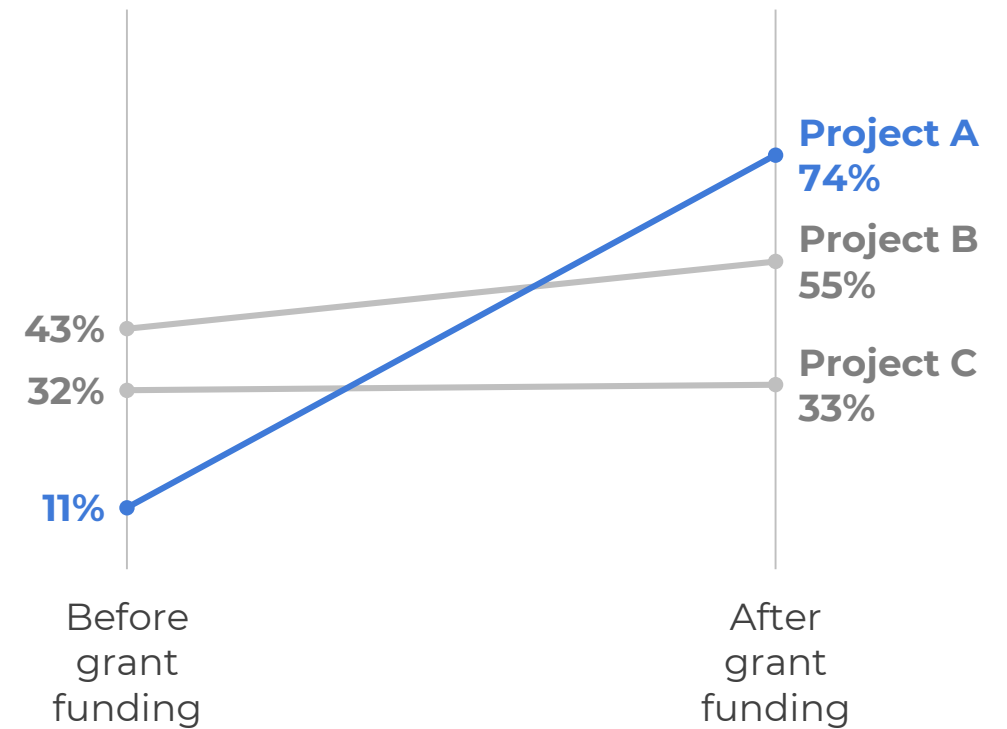
Traditional

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Storytelling

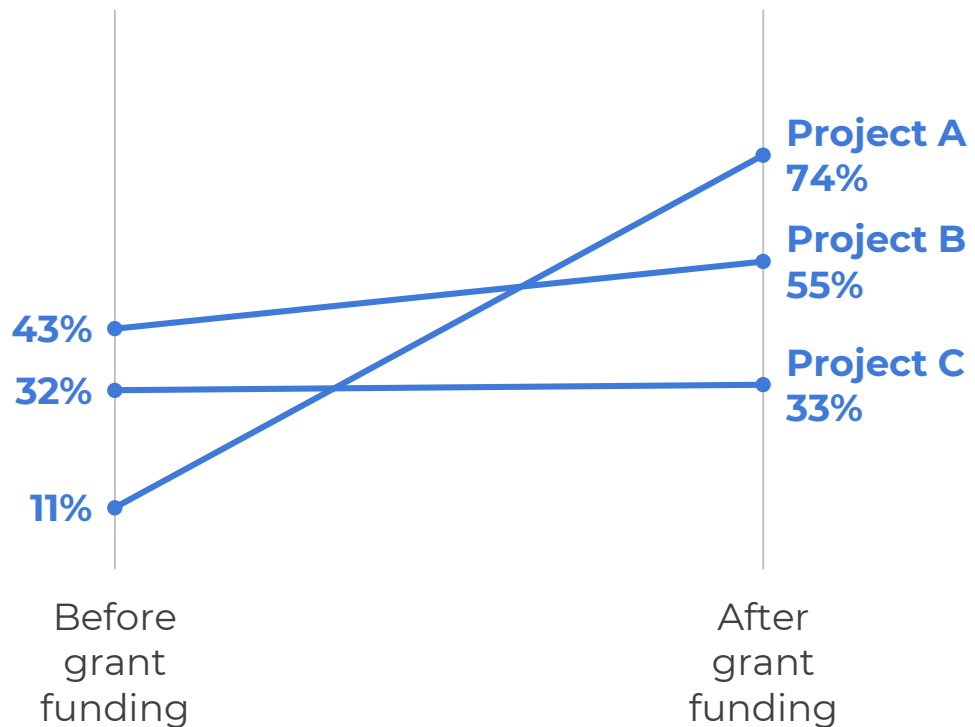
Project A Improved the Most After the Four-Year Grant Funding



Are Viewers Expecting a Story?

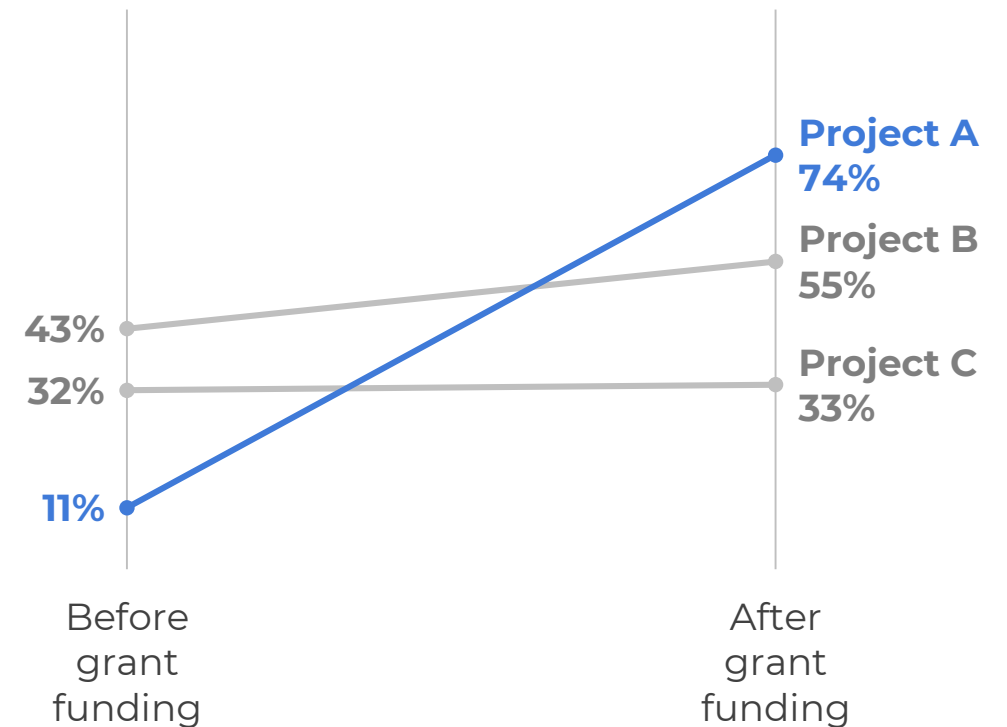
Traditional

Figure 2. Project Results Before and After the Four-Year Grant Funding



Storytelling

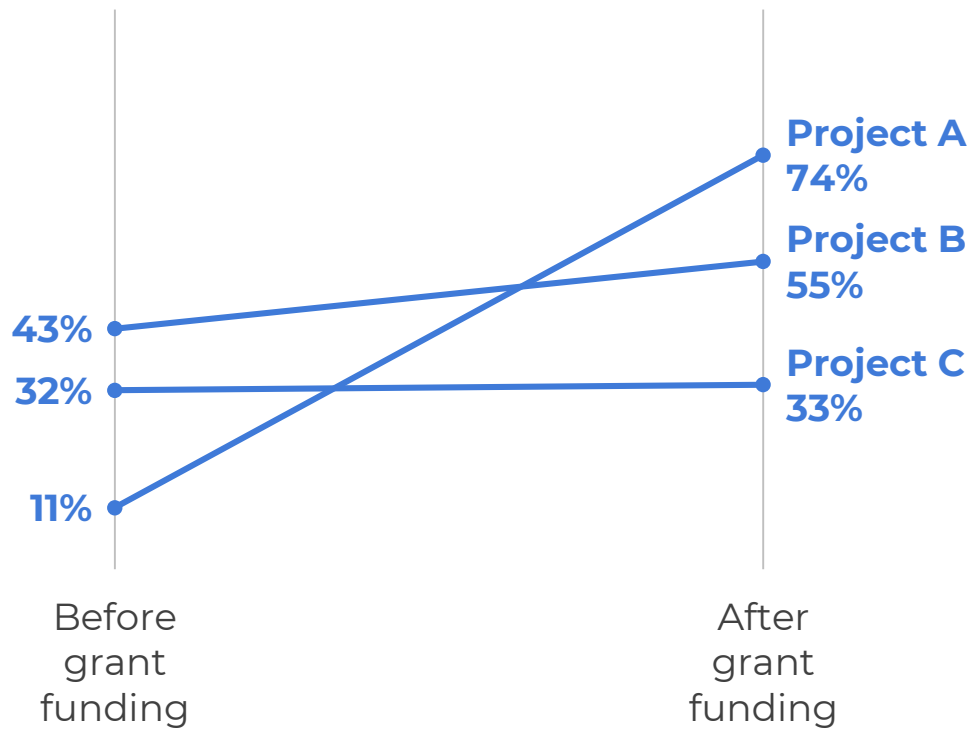
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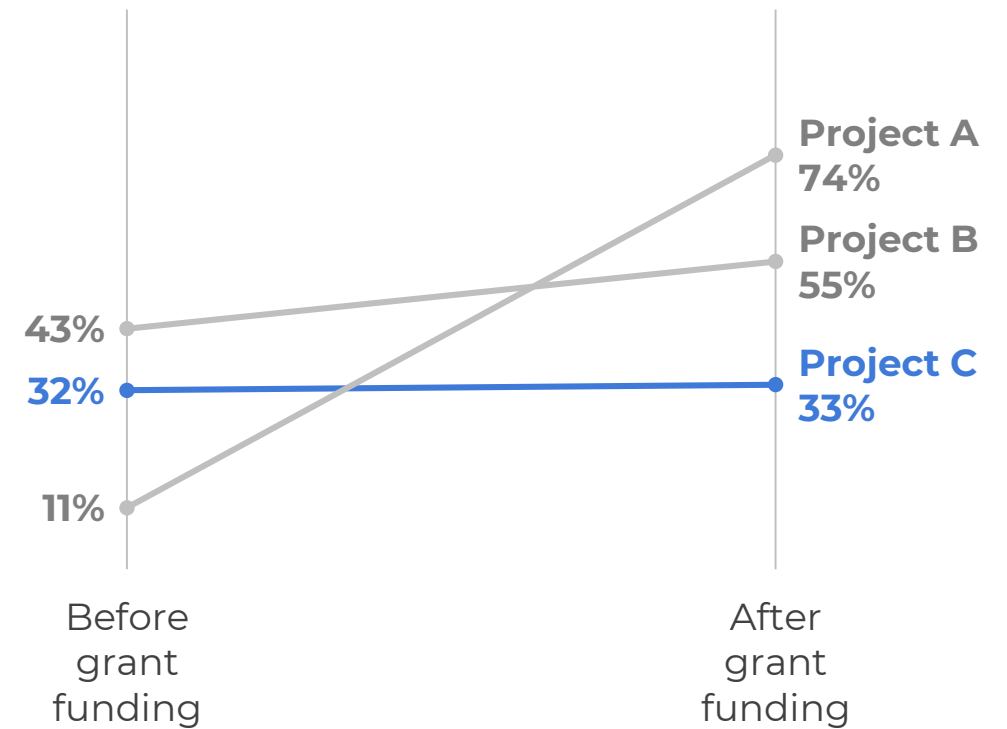
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Figure 2. Project Results Before and After the Four-Year Grant Funding



Storytelling

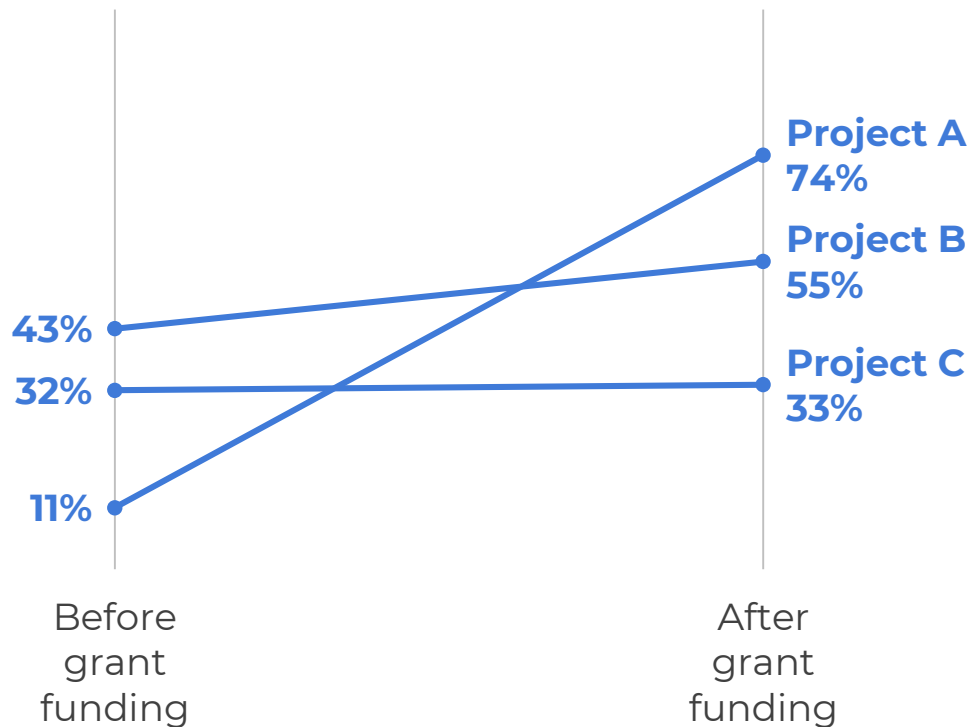
Project C Remained the Same
After the Four-Year Grant Funding



Are Viewers Expecting a Story?

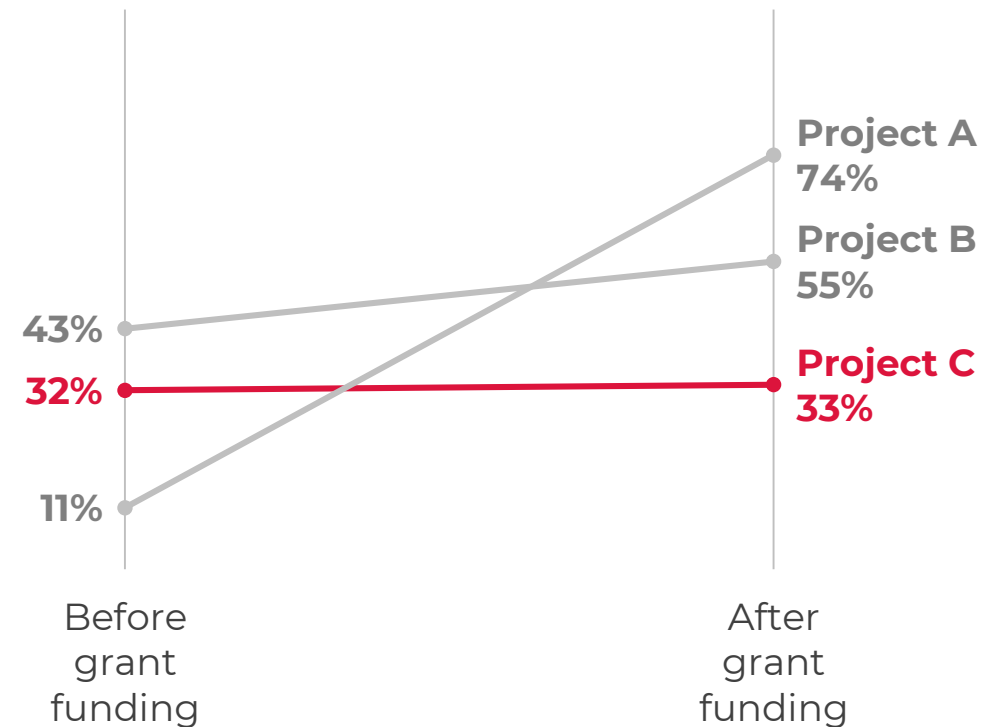
Traditional

Figure 2. Project Results Before and After the Four-Year Grant Funding



Storytelling

Project C Remained the Same
After the Four-Year Grant Funding



Are Viewers Expecting a Story?

Traditional

- Compliance
- IT
- Auditors
- Researchers/research
- Academia
- Analysts
- Supervisors
- **Technical**
- **Insiders**
- **“Your people”**

Storytelling

- Funders
- Boards
- Program managers
- Government (state and Federal)
- Direct care staff
- **Non-technical**
- **Outsiders**
- Supervisory/Board
- PR/communications
- External
- Media/journalists



Analyze
Your
Audience



**Choose
the Right
Chart**



Select a
Software
Program



Declutter



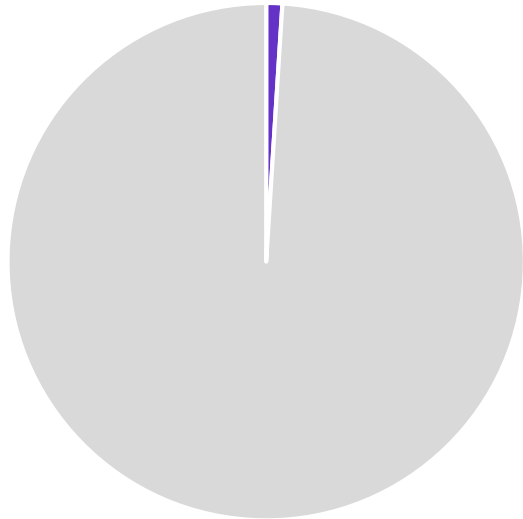
Clarify
with Color



Clarify
with Text

Pies

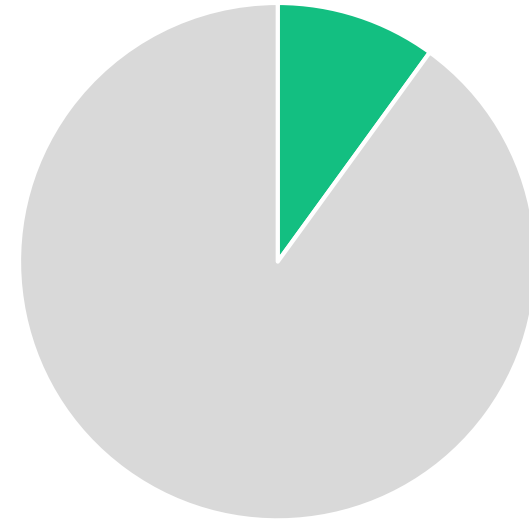
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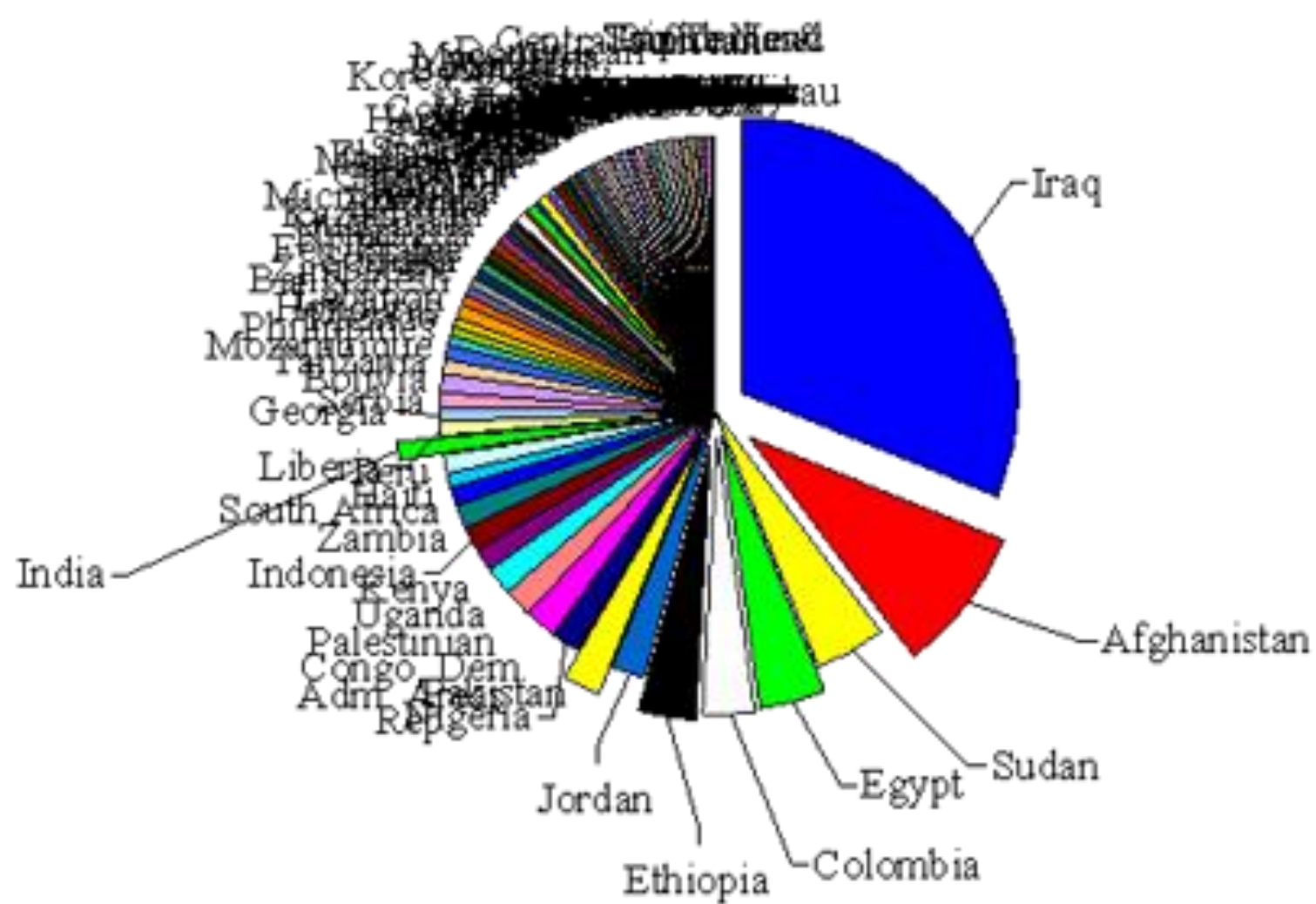
6%
of Group B



10%
of Group C

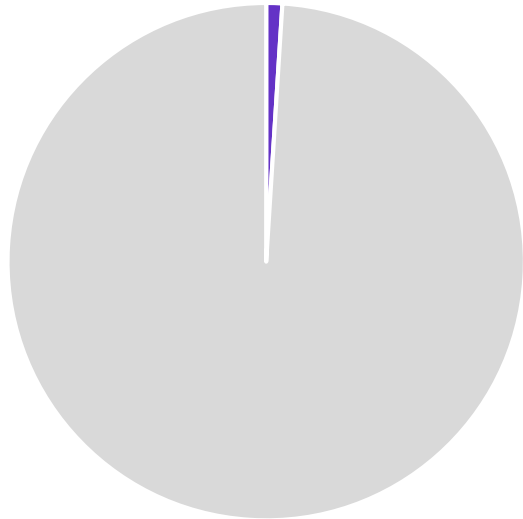


Pies



Pies

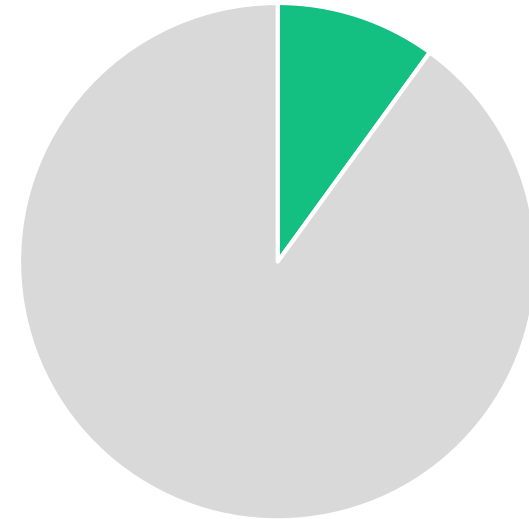
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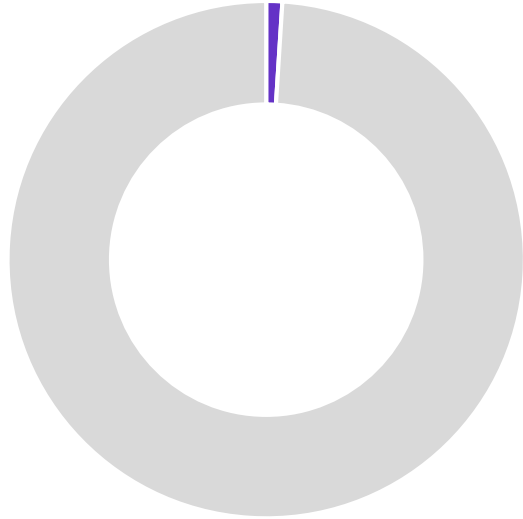


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of Group C

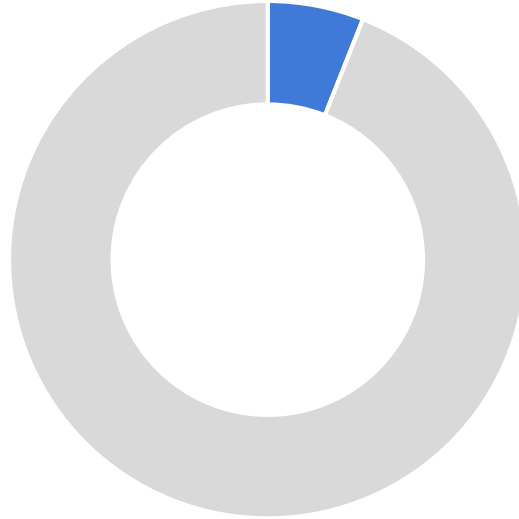


Donuts

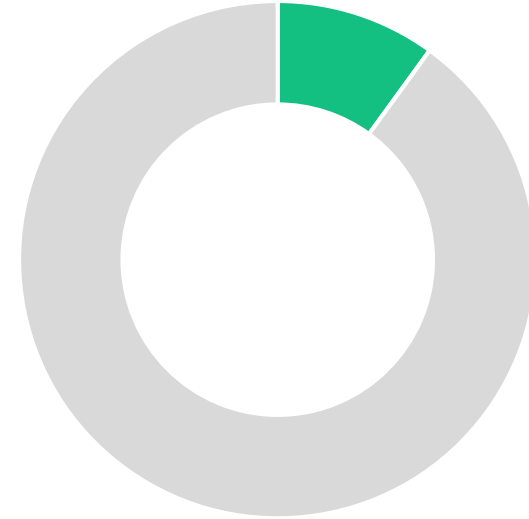
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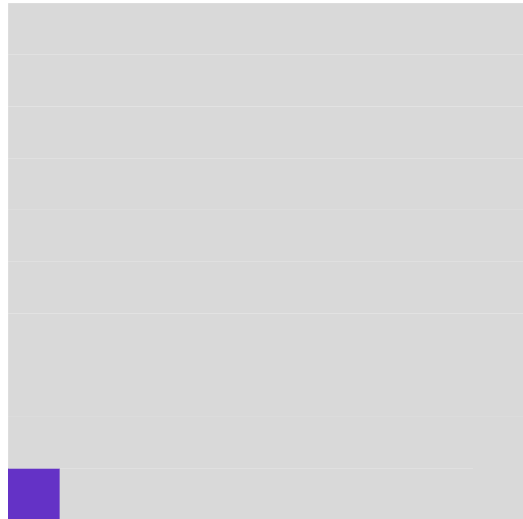


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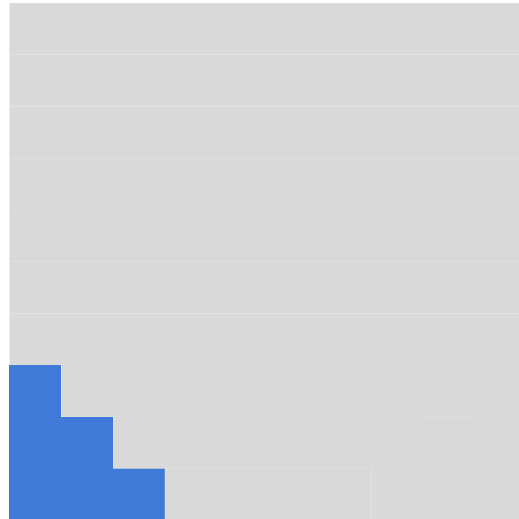


Square Pies

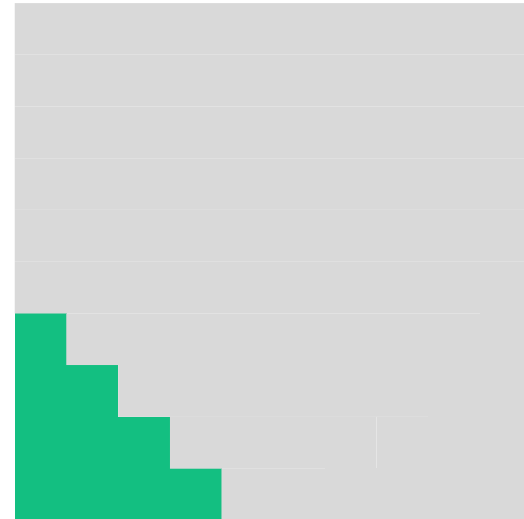
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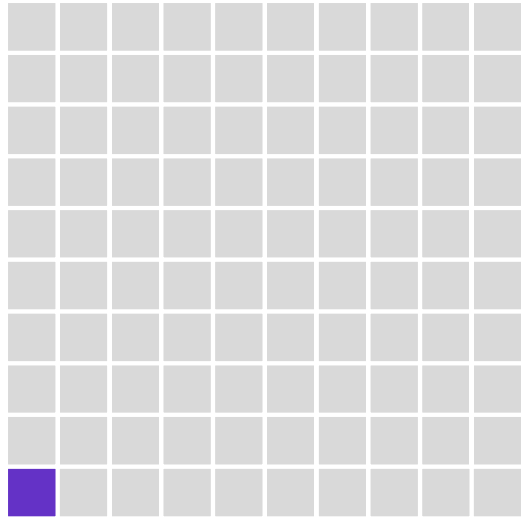


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of Group C

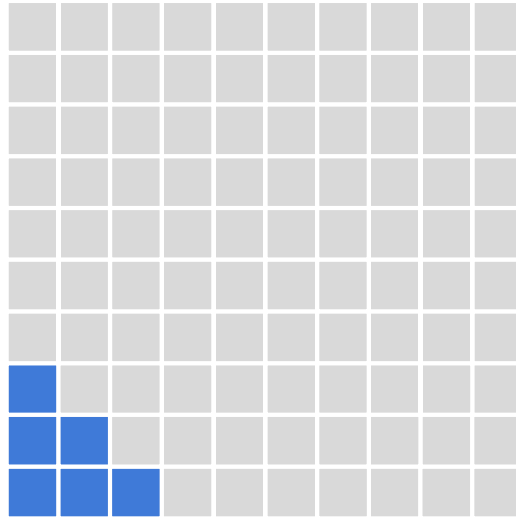


Waffles

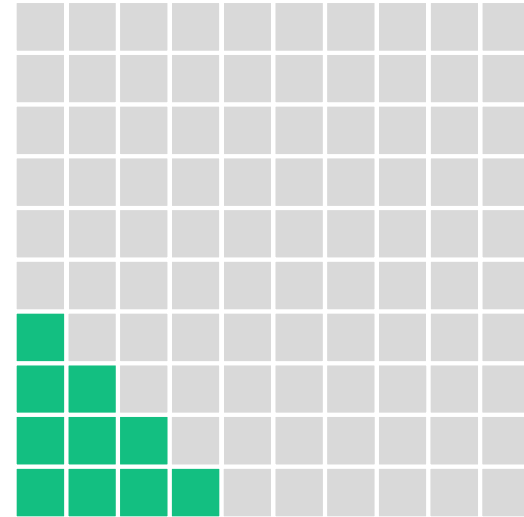
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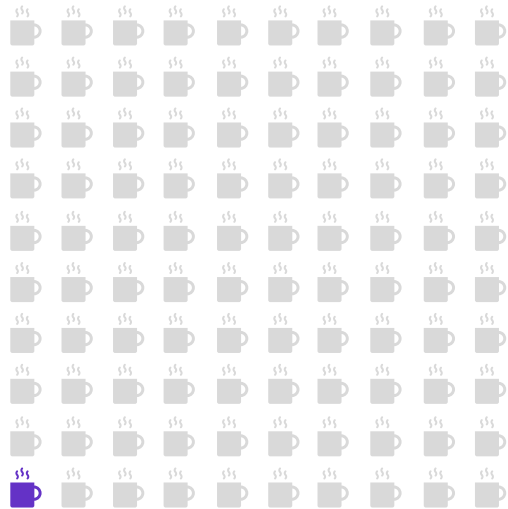


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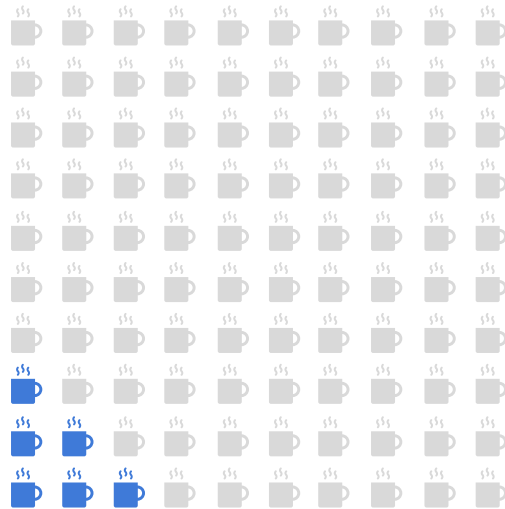


Icon Arrays

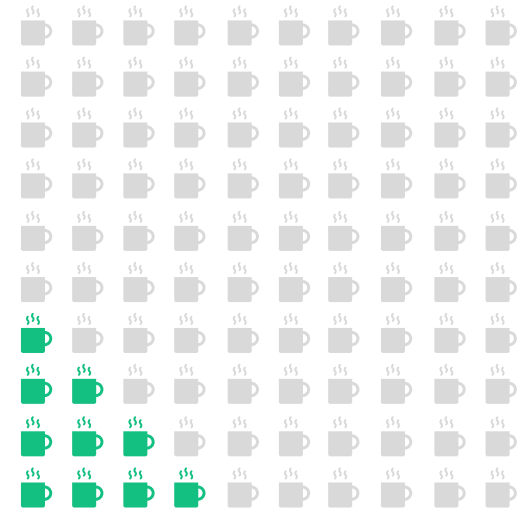
1%
of Group A



6%
of Group B



10%
of Group C



Icon Arrays

NFL survivor Kyle Shanahan recalls D.C. setbacks as he takes the helm of the 49ers **SPORTS**



Mail wars If the U.S. Postal Service is losing money, why is it cutting these deals? **BUSINESS**



Reading into the resistance Political reflections from both sides of the aisle **OUTLOOK**

SAVE \$408 SUNDAY COUPON INSERTS

The Washington Post

Prices may vary in areas outside metropolitan Washington

SU V1 V2 V3 V4



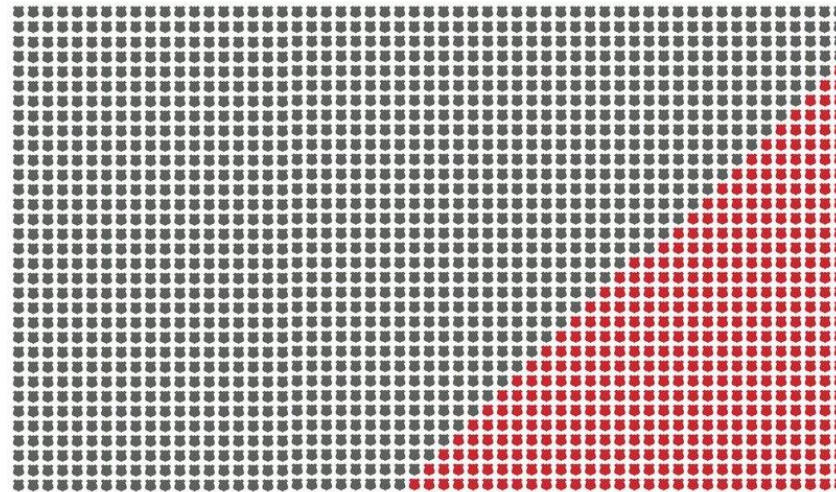
Mostly sunny 84/71 • Tomorrow: Thunderstorms 80/68 **C12**

Democracy Dies in Darkness

SUNDAY, AUGUST 6, 2017 • \$3.50

FIRED/REHIRED

Since 2006, at least 1,881 officers have been dismissed from 37 of the nation's largest police departments for behavior that betrayed the public's trust. Of those, **451 appealed and won their jobs back.**



Afghan allies defend general

TRUMP'S CRITICISM ALARMS KABUL

Strategy plan delayed as country's turmoil mounts

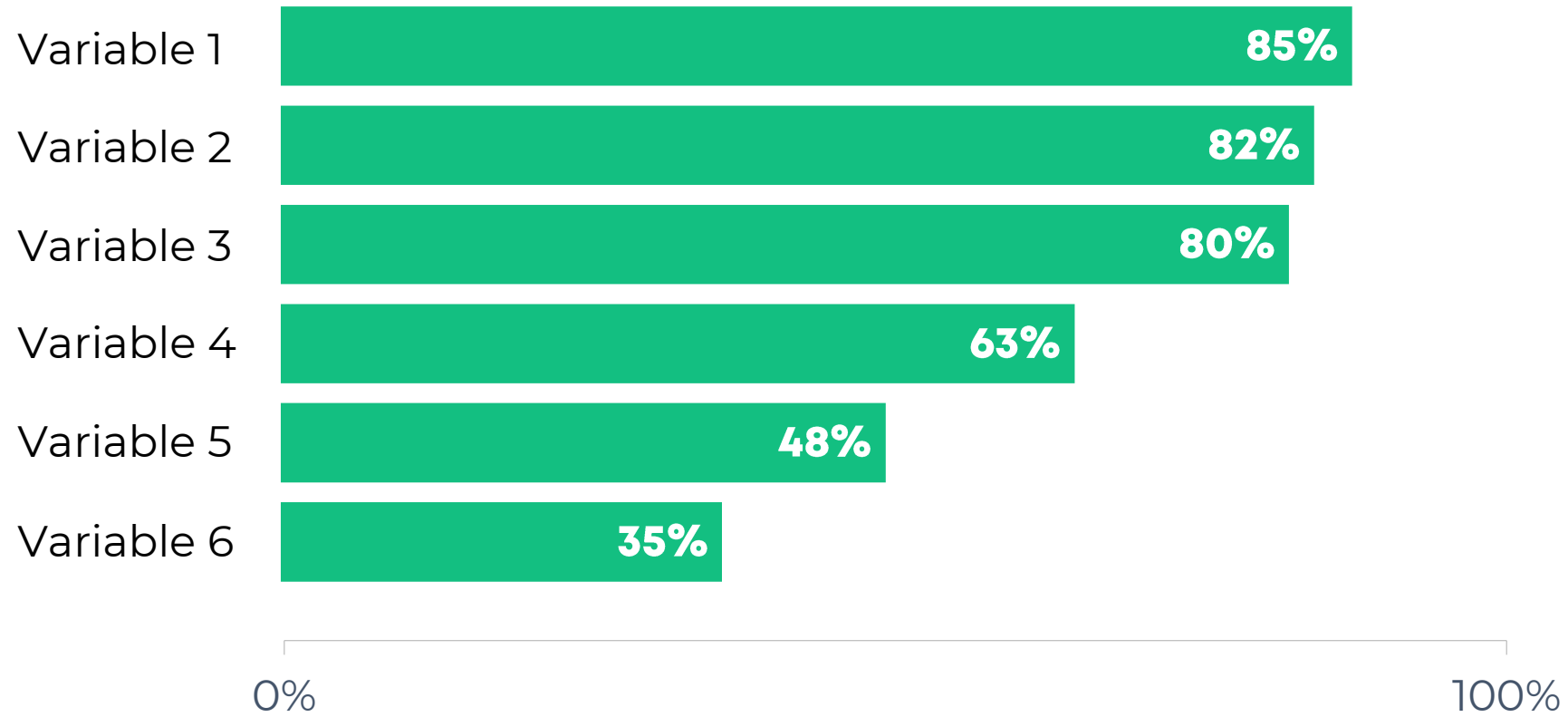
BY PAMELA CONSTABLE

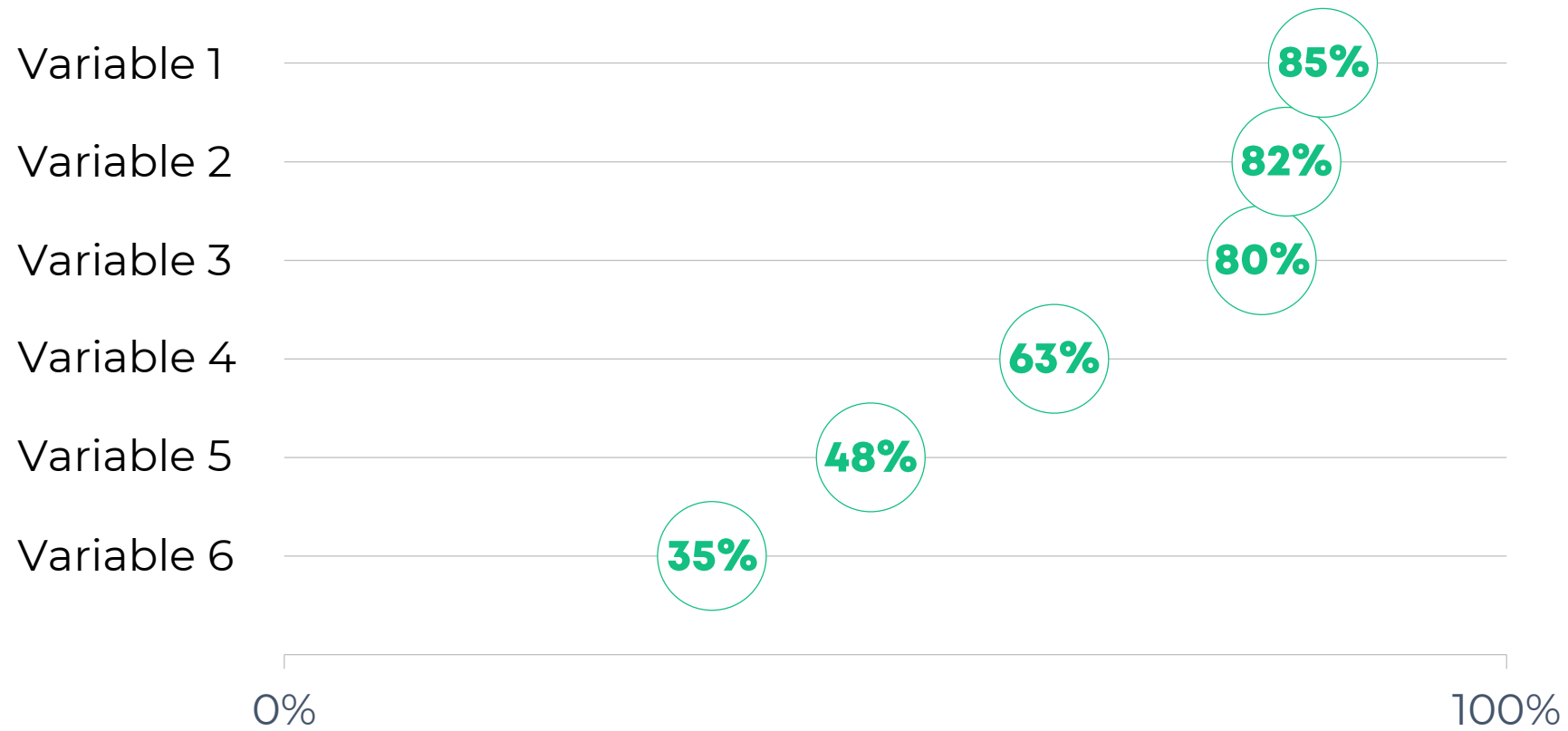
KABUL — Afghans are alarmed by widespread reports that President Trump has threatened to fire Gen. John W. Nicholson Jr., the highly regarded U.S. military commander in this war-torn country, and that Trump has also delayed choosing a new military and political strategy Afghans have awaited anxiously for the past six months.

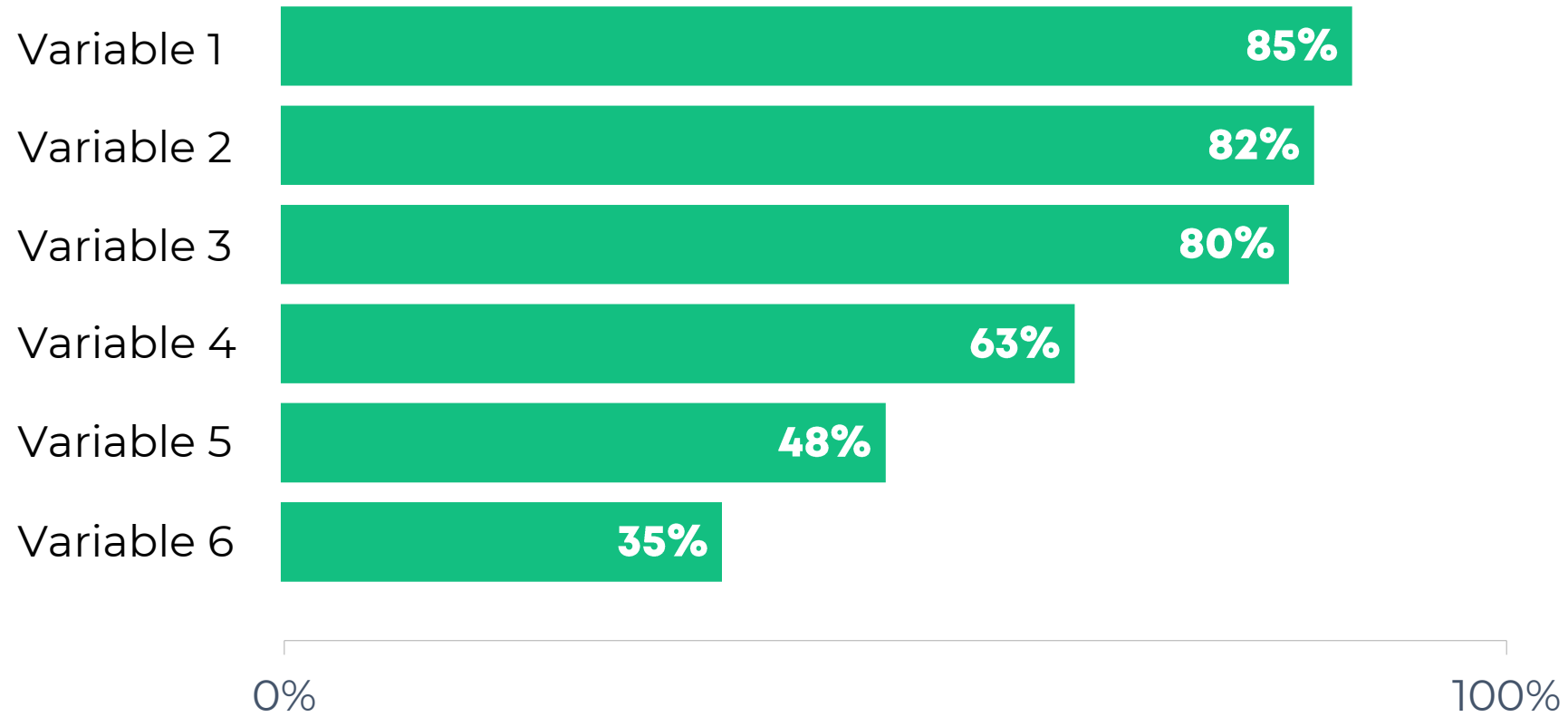
Nicholson, 61, the top U.S. military official in Afghanistan for the past 16 months, has become the best-known face of Washington here, working closely with Afghan military and civilian officials, and vocally advocating expanded U.S. military engagement, while the Taliban and other insurgents continue aggressive attacks across the country.

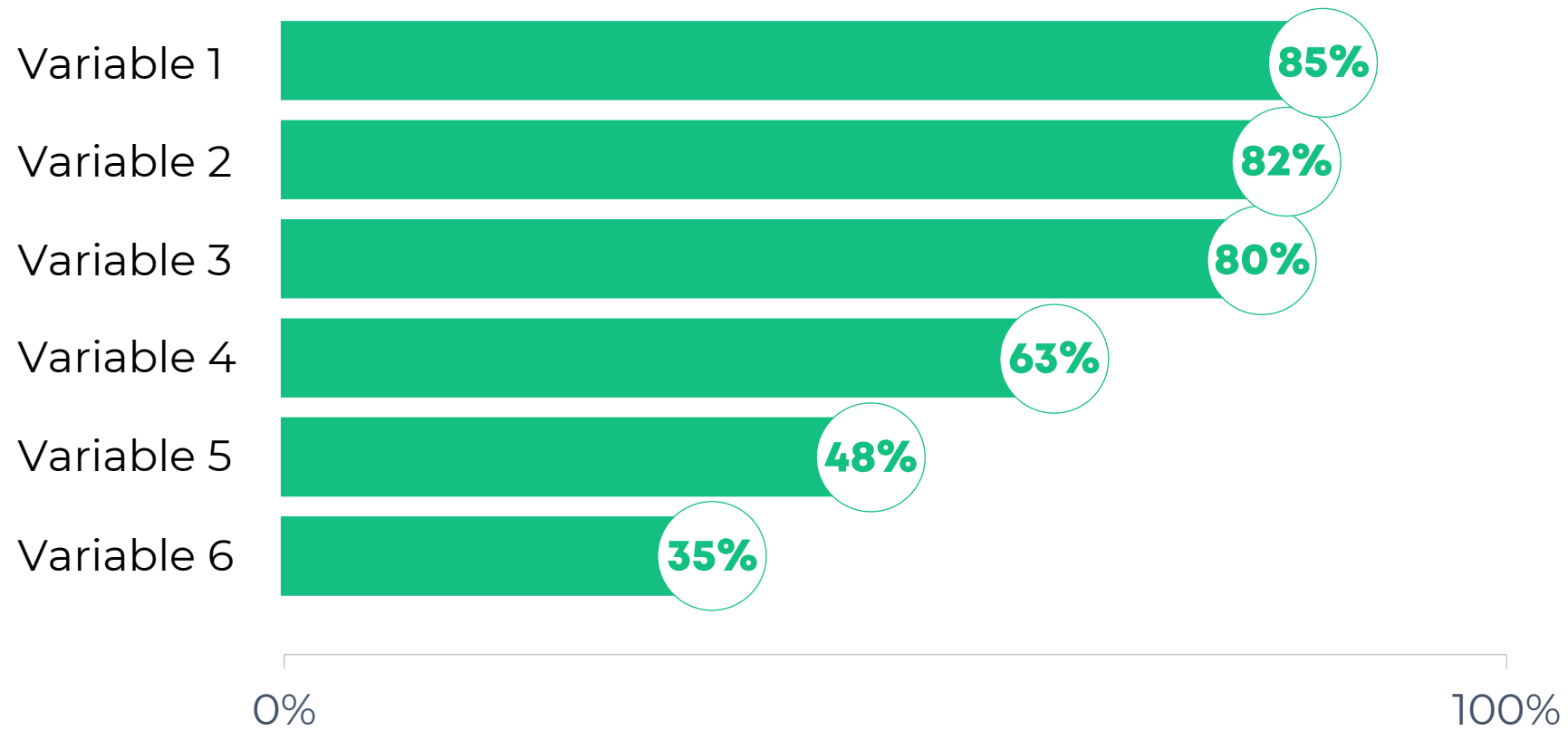
Now, with two U.S. service members killed in the past week,

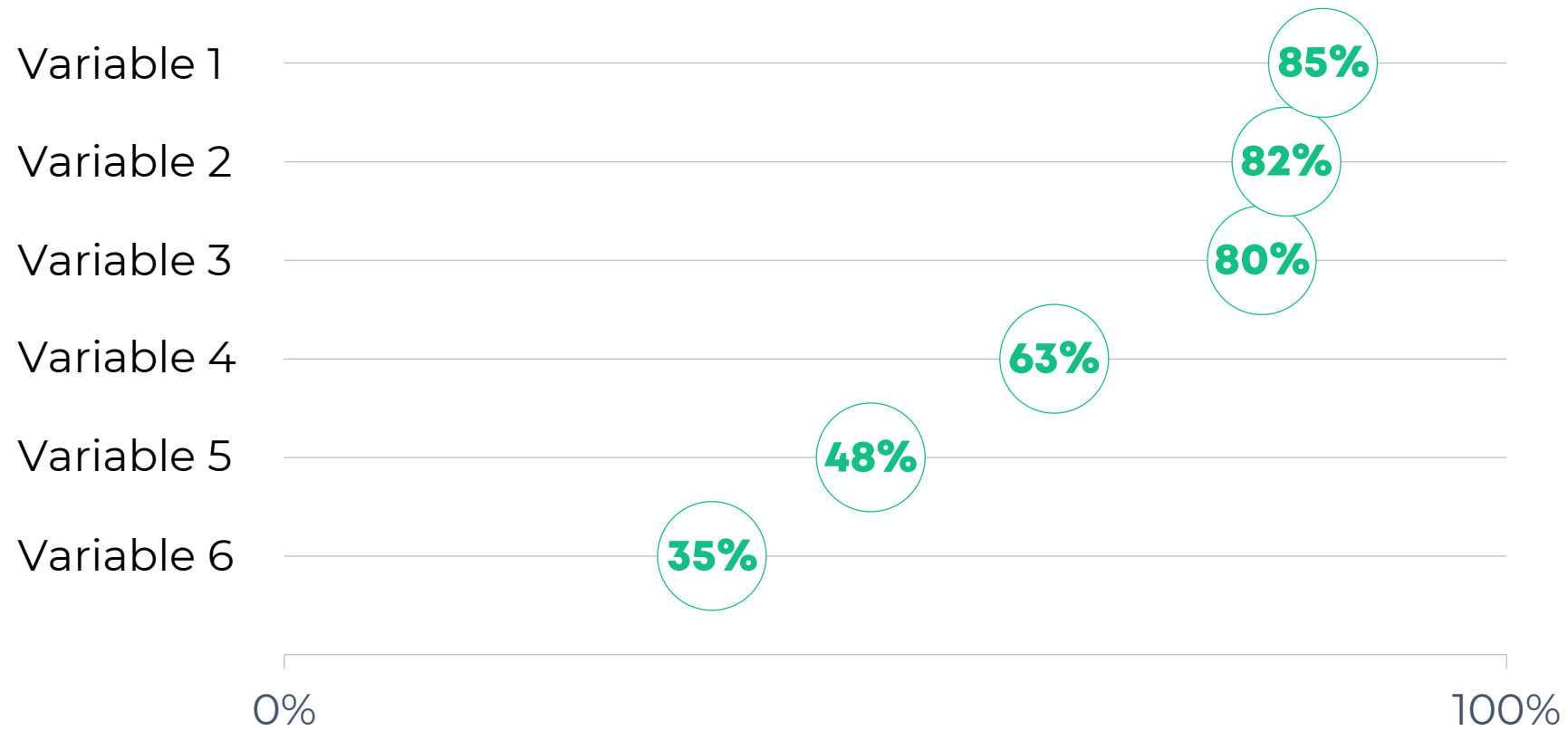
Bar

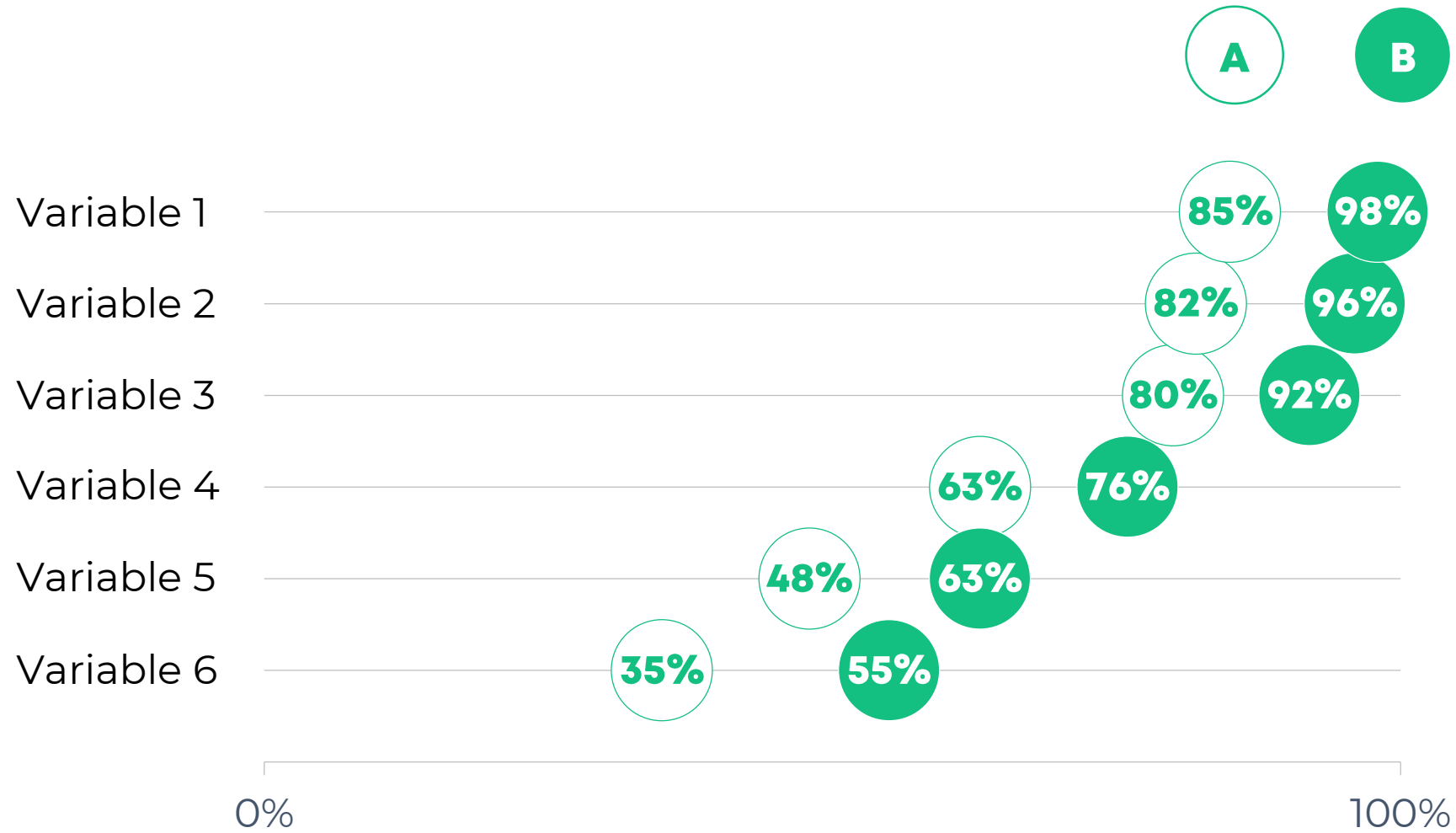




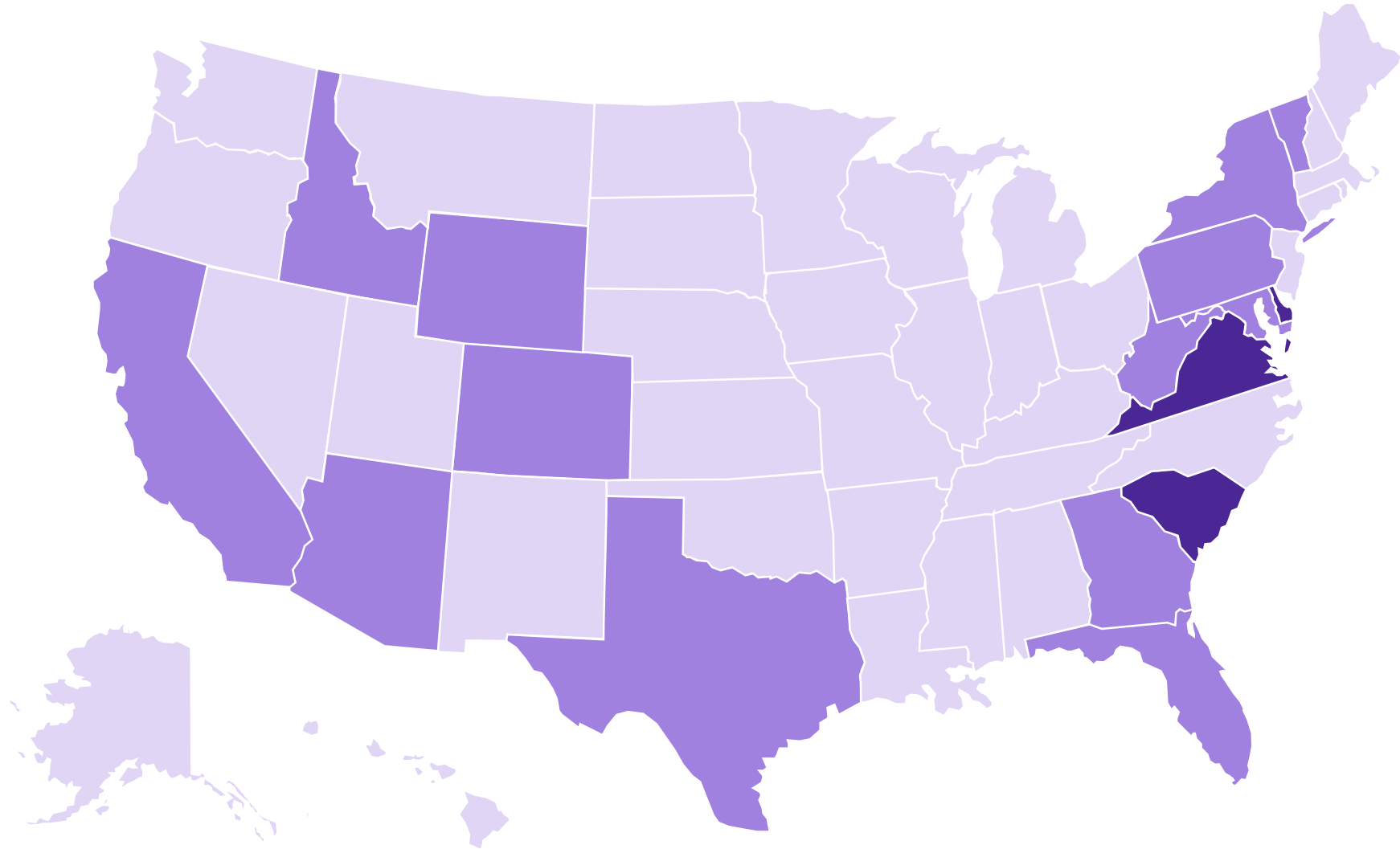
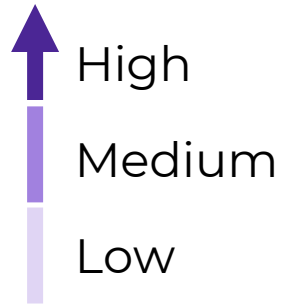




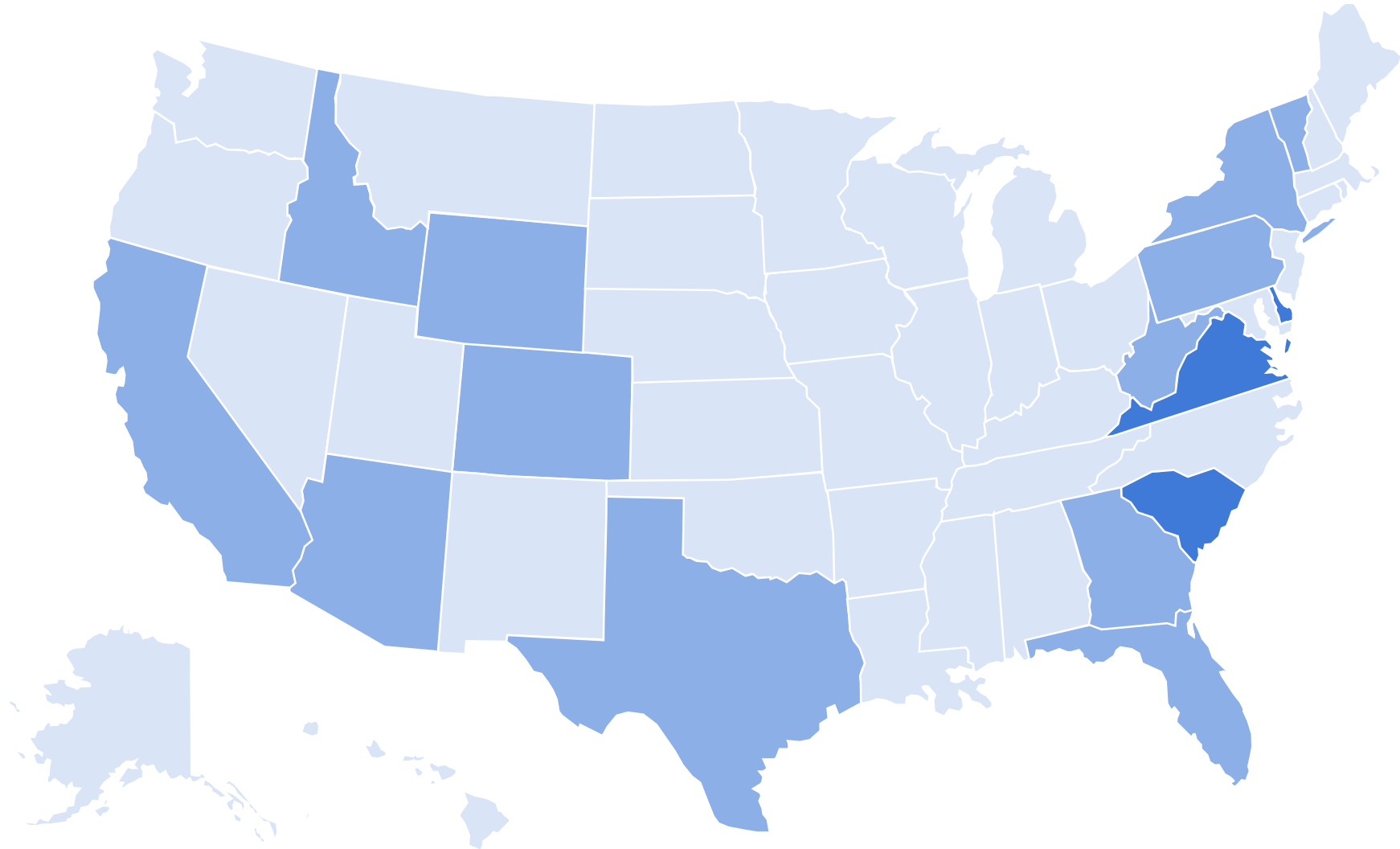
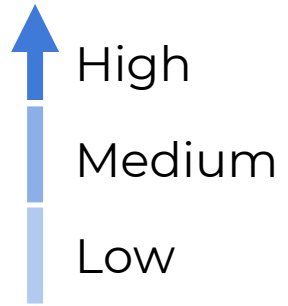




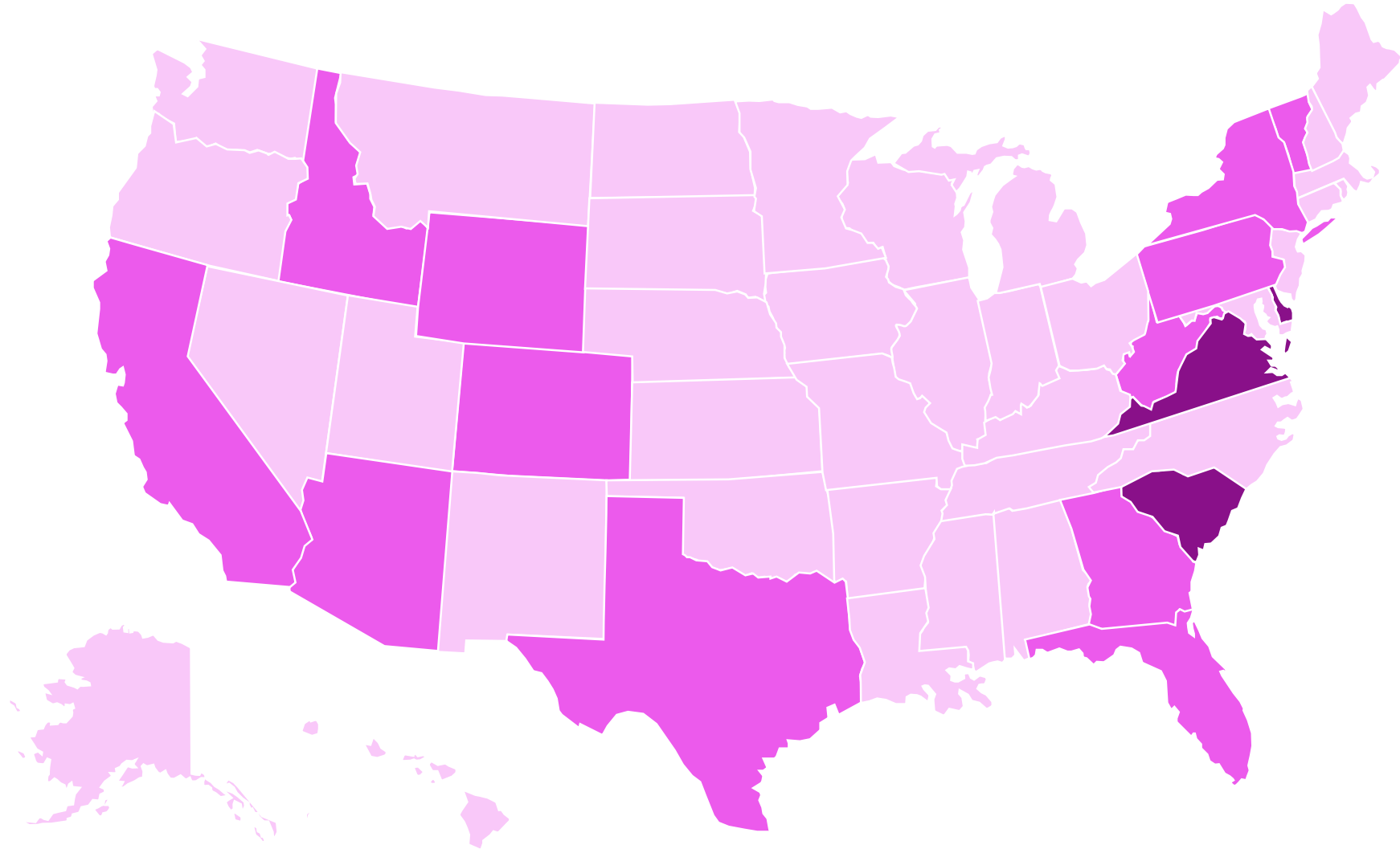
Choropleth Maps



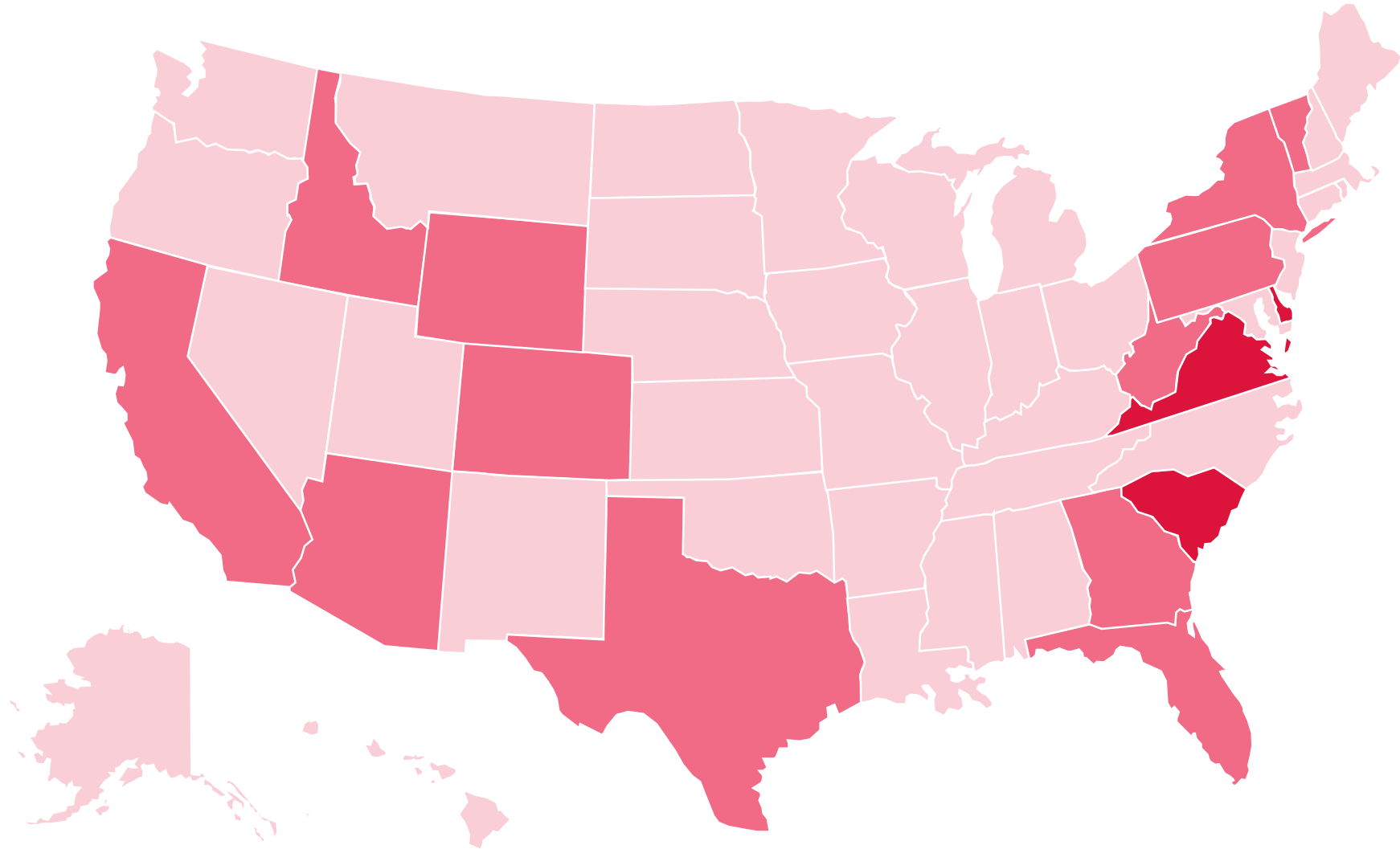
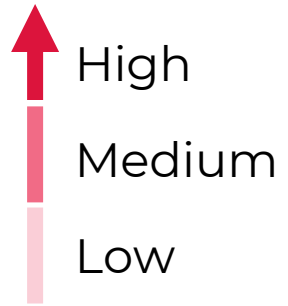
Choropleth Maps



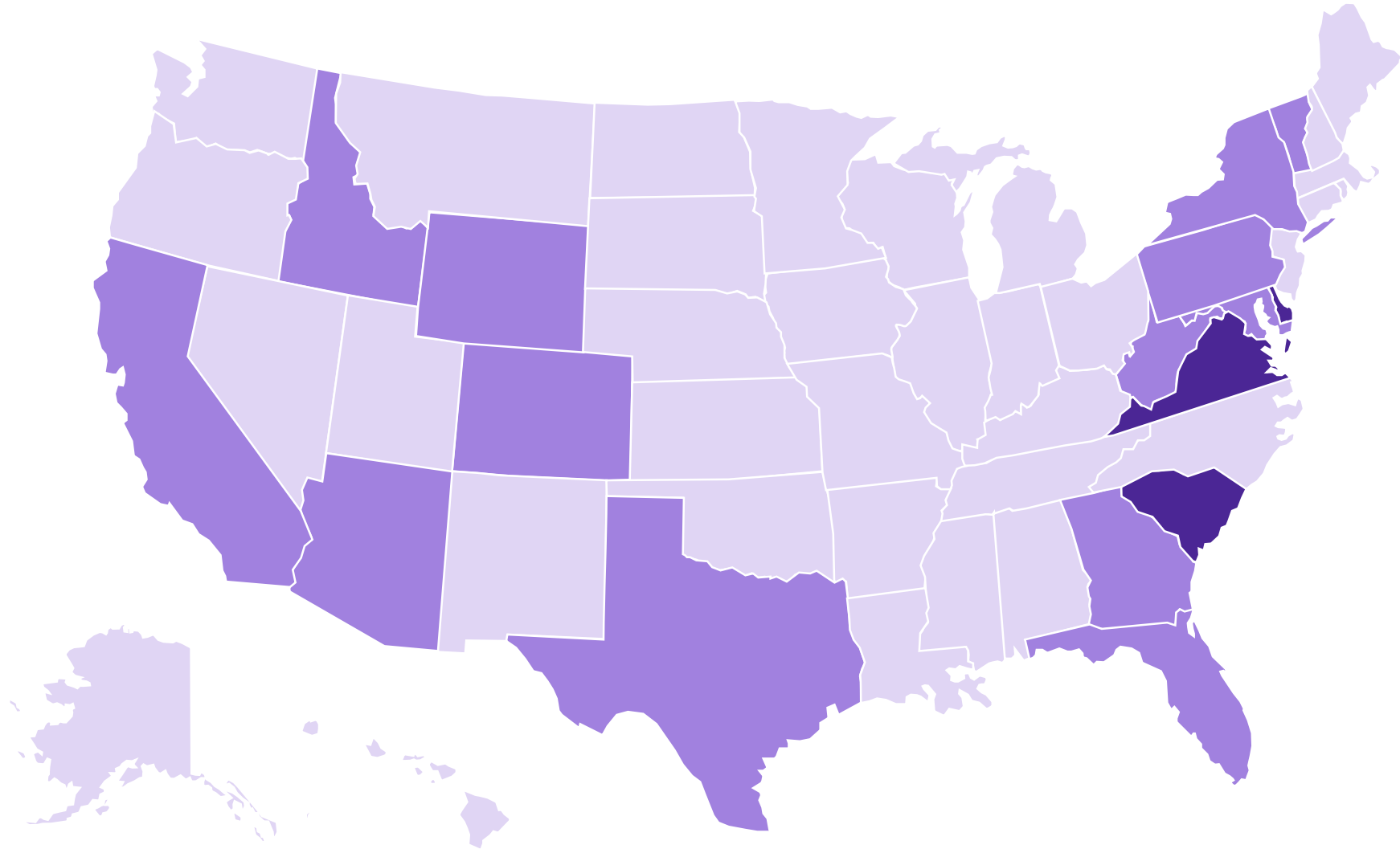
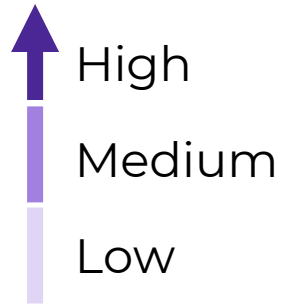
Choropleth Maps



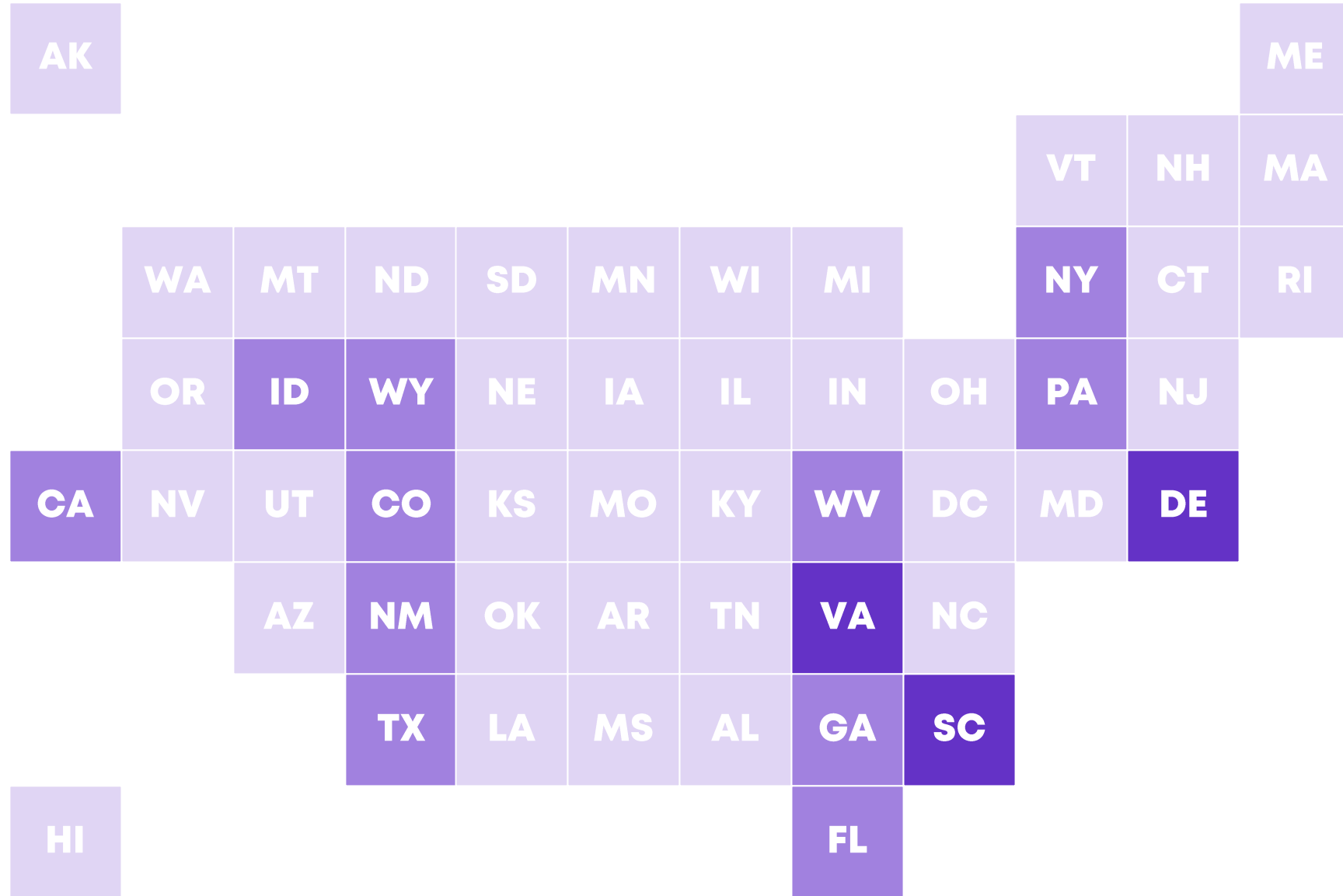
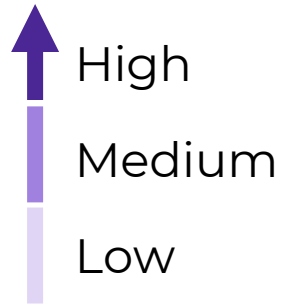
Choropleth Maps



Choropleth Maps

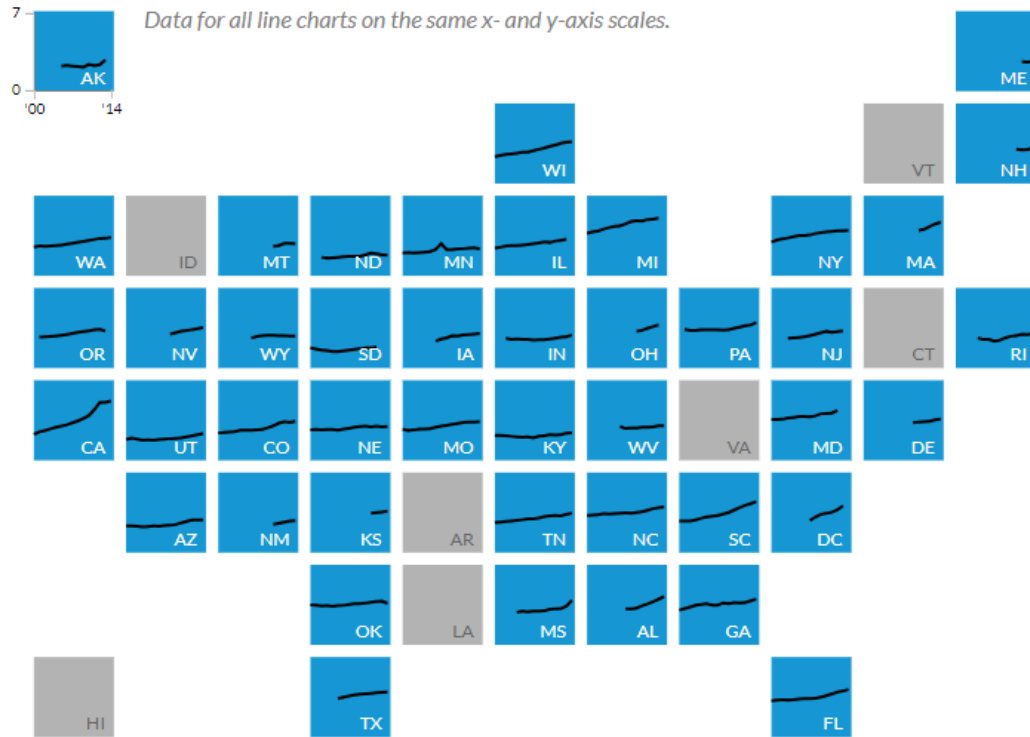


Tile Grid Maps



Tile Grid Maps

Average Time Served for All Offense Categories



States shown in gray did not report complete data.

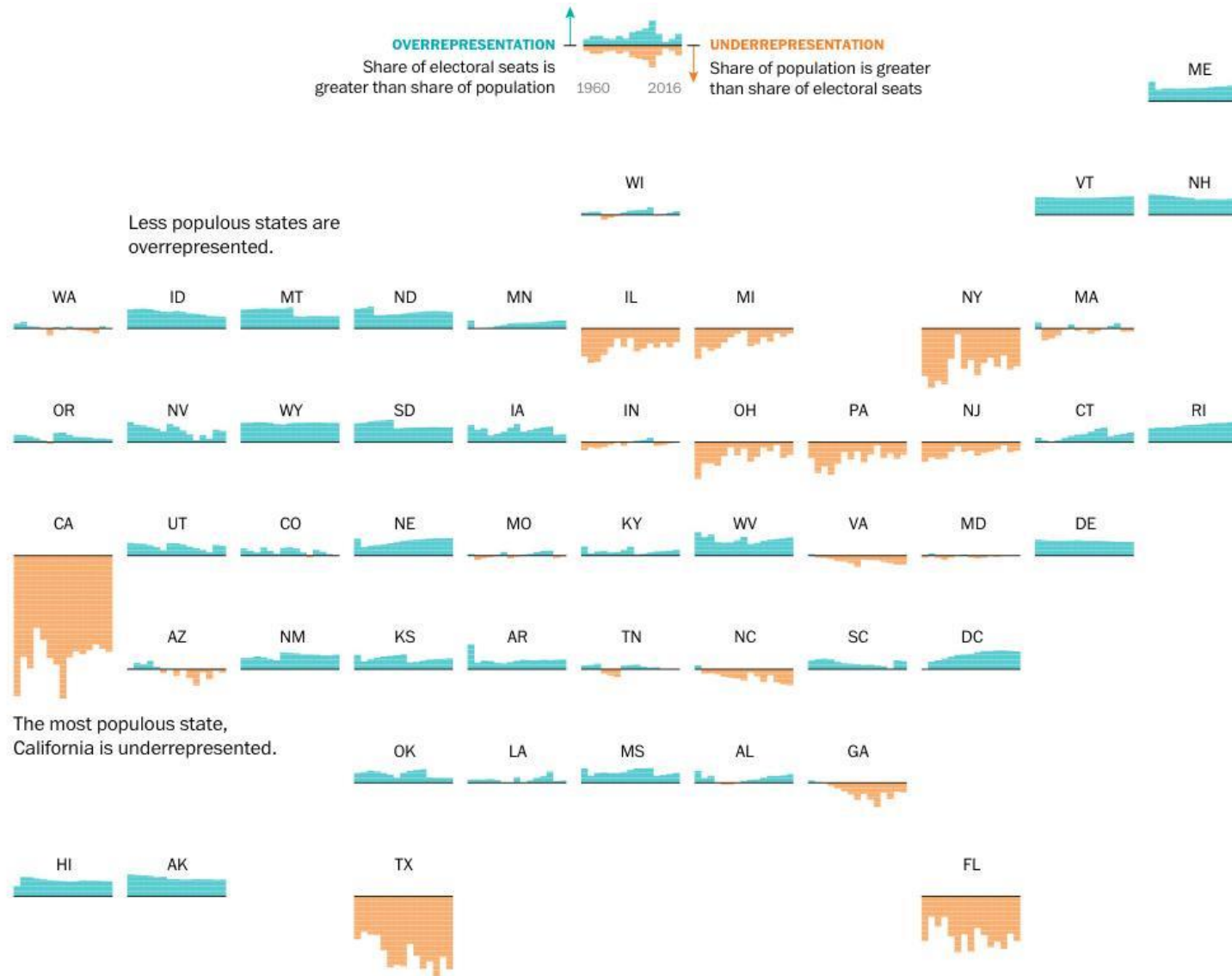
On average, people are spending more time in prison.

These graphs represent a [year-end snapshot](#) of the average number of years that people in state prisons have been incarcerated so far. Many will go on to serve considerably more time.

Each state's story is unique, but we found a consistent upward trend in the amount of time people spend in state prisons. Since 2000, the average time served has risen in all 44 states (including the District of Columbia) that reported complete data to the [National Corrections Reporting Program](#).

In some states, this rise began years earlier. But these recent trends suggest that most states are still feeling the effects of policy decisions from the [1980s and '90s](#) that were designed to keep people in prison longer.

Tile Grid Maps



The Washington Post, https://www.washingtonpost.com/graphics/politics/how-fair-is-the-electoral-college/?tid=sm_pg

Tile Grid Maps



STAY CONNECTED

Email Address



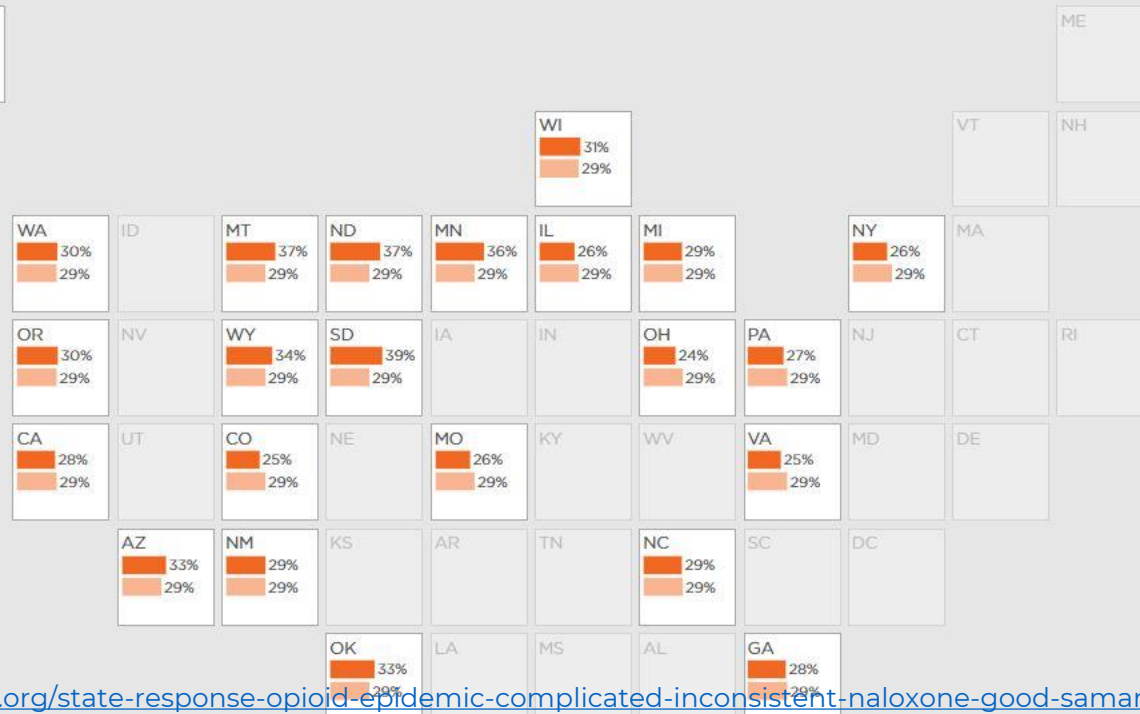
Accessible

About Us Services Research Databank Blog Hispanic Institute

The AI/AN population is relatively young, which means it is particularly important to understand how adverse childhood experiences (ACEs) affect this population.

Share of children under age 18 in 2016*, among the AI/AN national and AI/AN state populations.

States U.S.



Share of AI/AN population that is under 18 years old

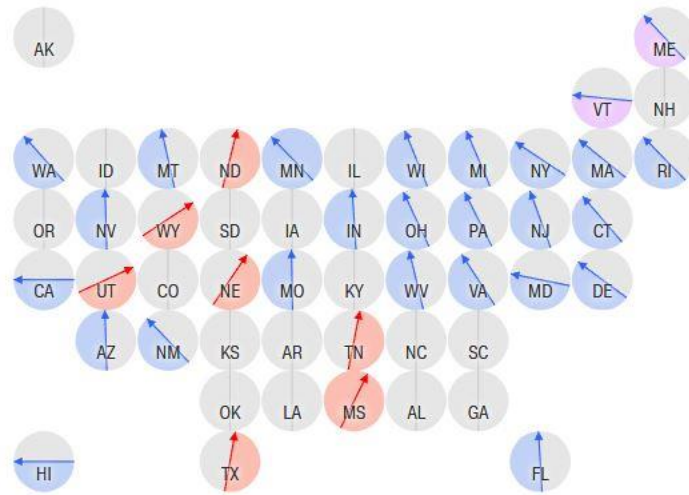


Tile Grid Maps

Forecast Map

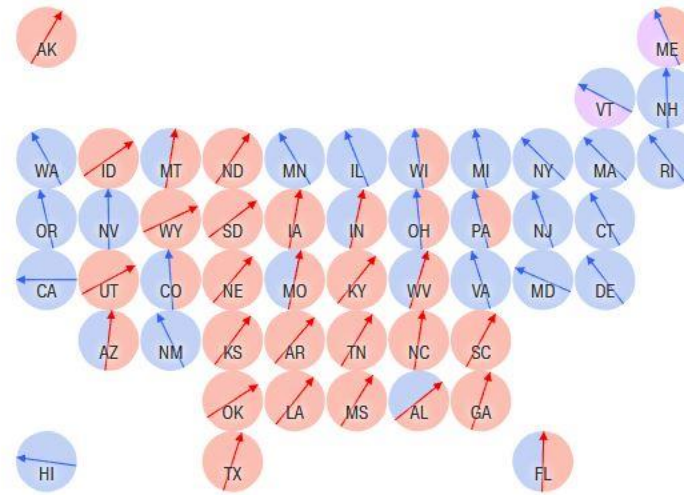
Forecast just for Senate races on the ballot in 2018

Each race is shaded by who is favored (blue for Democrat, purple for independent and red for Republican) with an arrow indicating how much that side is favored. An arrow pointing to the left or right means a candidate is heavily favored while an upward arrow means a very close race.



Forecast full Senate makeup after 2018 elections

Each state has two halves, one for each senator who represents the state. The arrow tells you how Democratic or Republican the state is expected to be based on an average of the forecast win margin (for seats up this year) and the overall state partisanship for other seats.

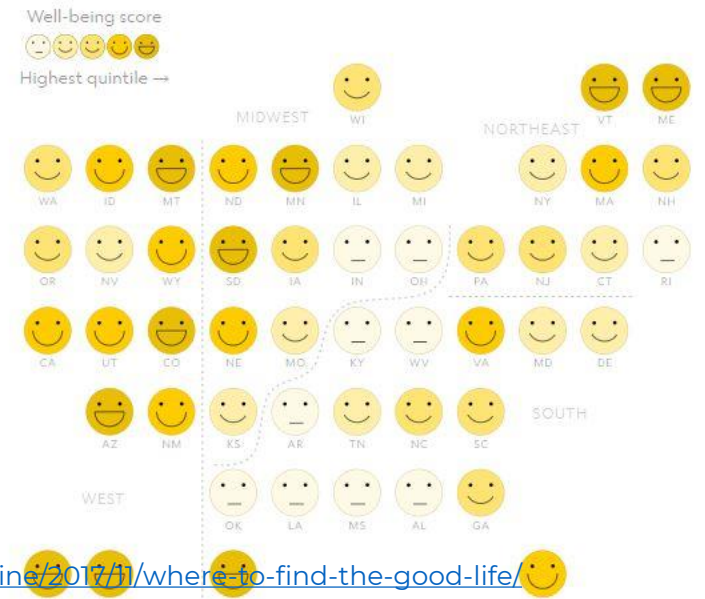


Tile Grid Maps

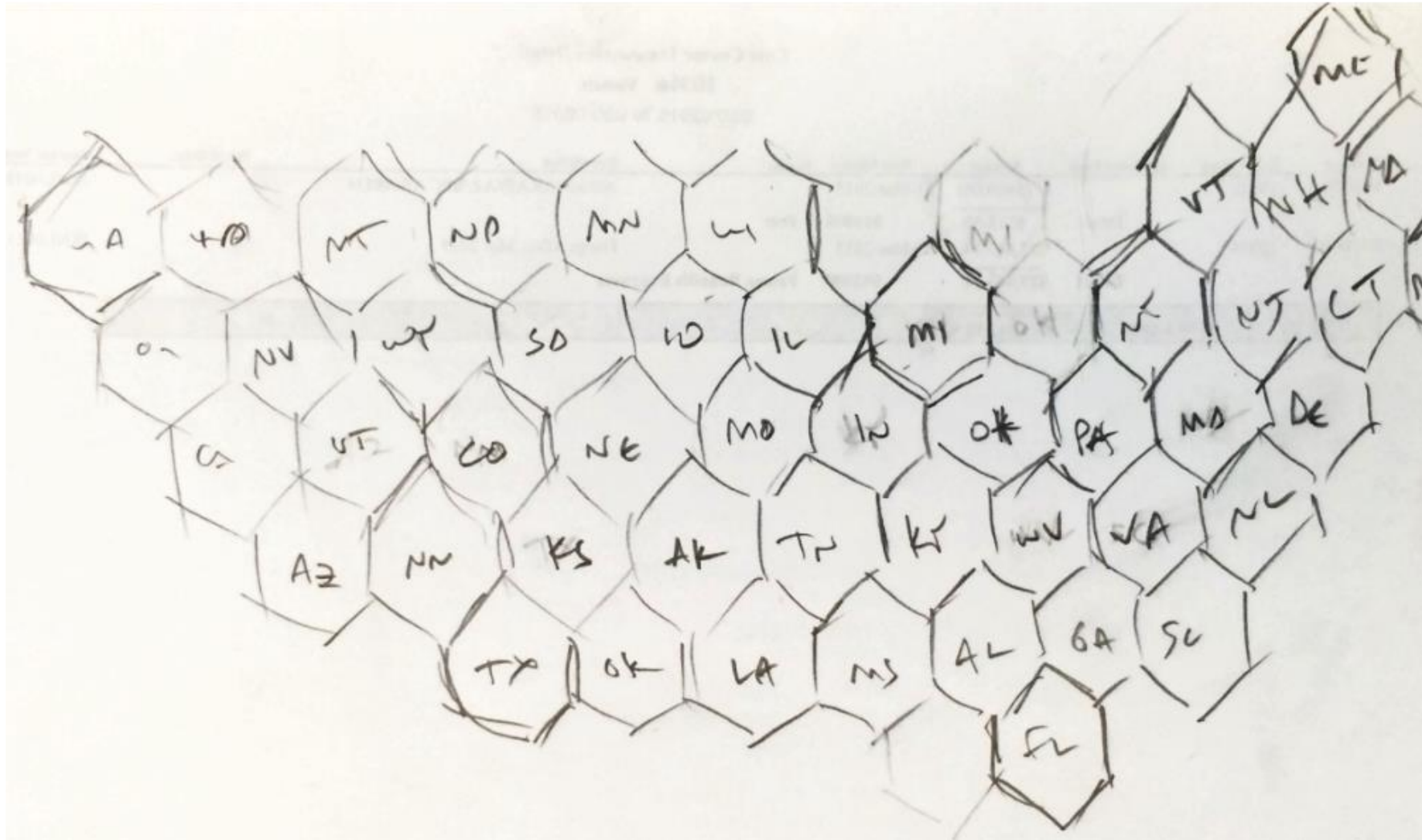
WHERE TO FIND THE GOOD LIFE

How happy, healthy, and secure are Americans? Gallup asked half a million adults across the United States to rate their well-being from one to 100 across five factors: **daily life**, **physical health**, **location**, **finances**, and **companionship**. Combined, these measurements determined the states and cities with the highest and lowest well-being.

Wednesday, Oct. 18, 2017

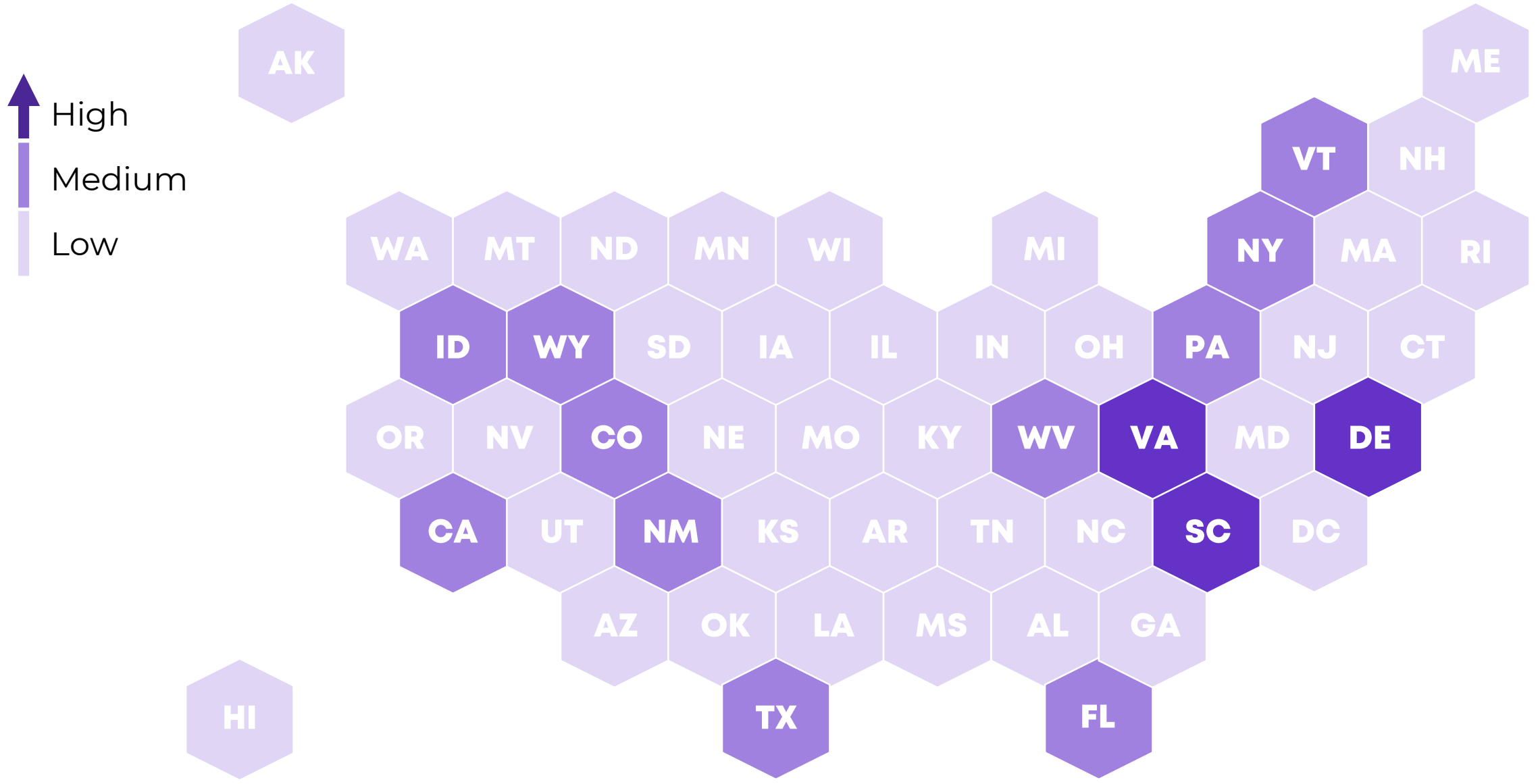


Hex Maps



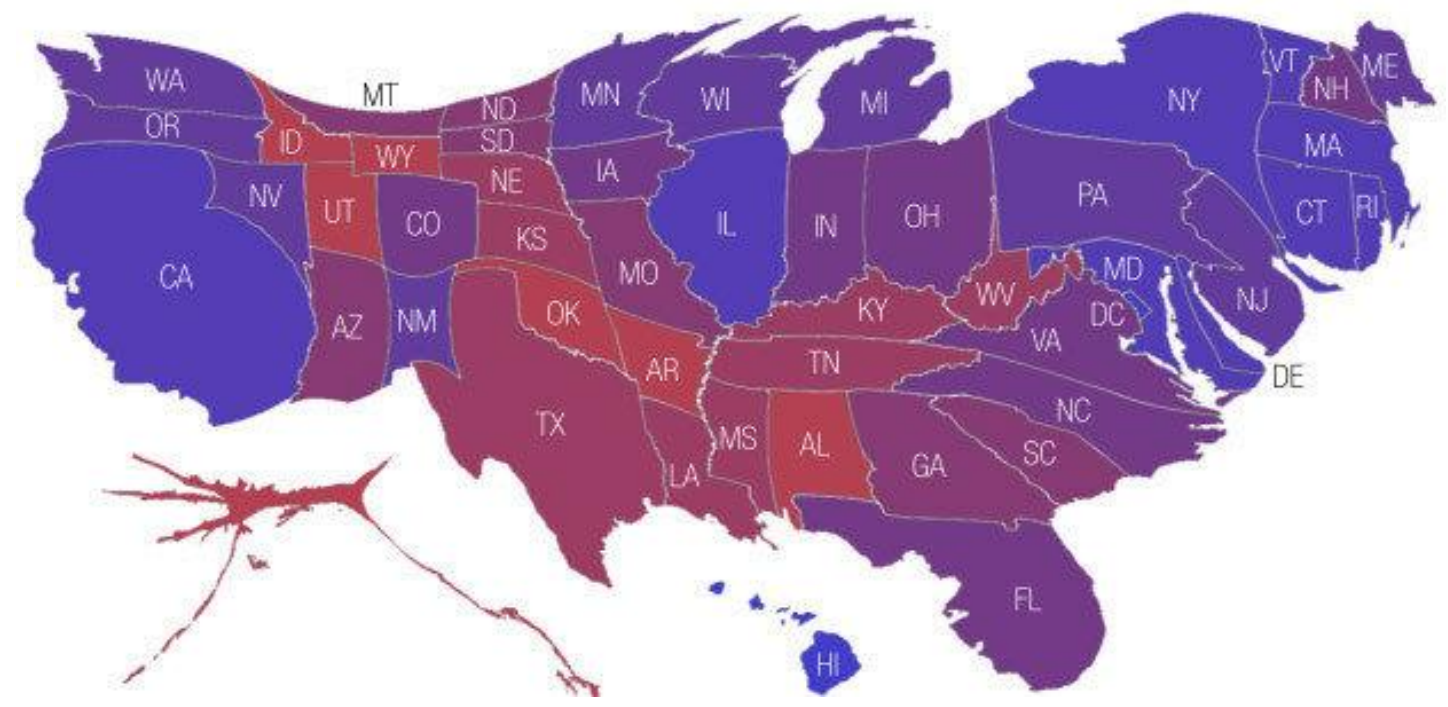
NPR, Danny BeDellus, <http://blog.apps.npr.org/2015/05/11/hex-tile-maps.html>

Hex Maps



Cartograms

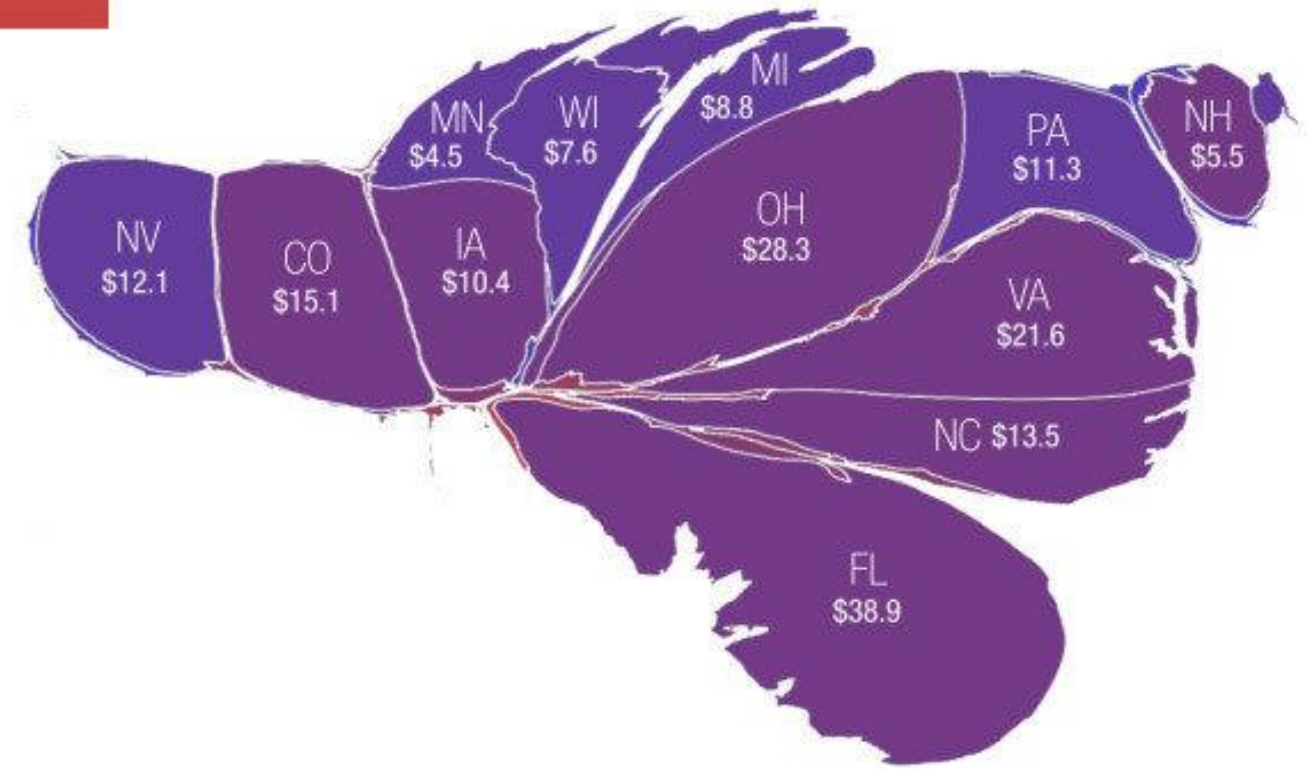
Electoral Votes



NPR, <https://www.npr.org/sections/itsallpolitics/2012/11/01/163632378/a-campaign-map-morphed-by-money>

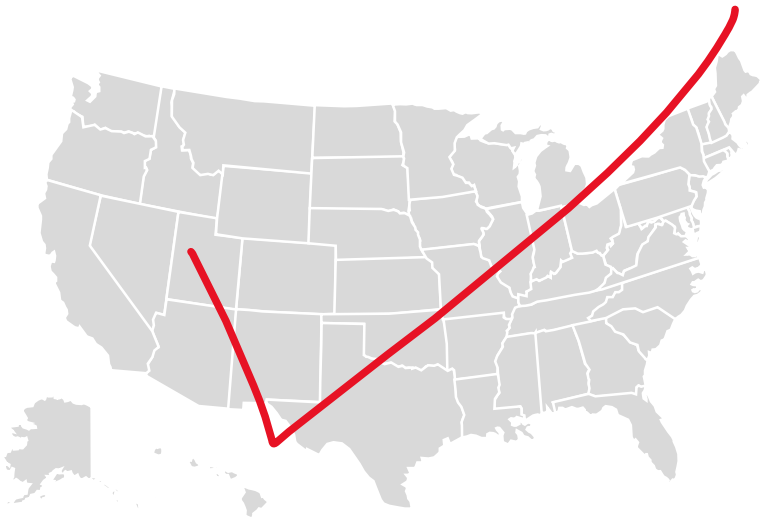
Cartograms

Ad Spending Per State In Millions Of Dollars

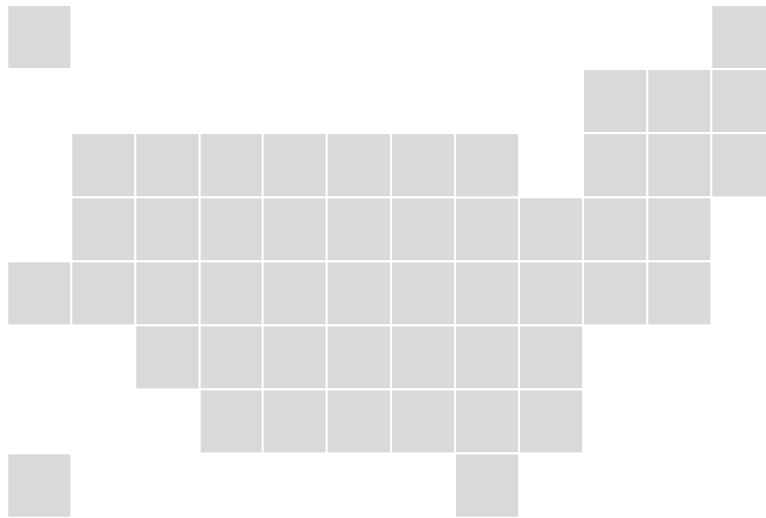


Which Map?

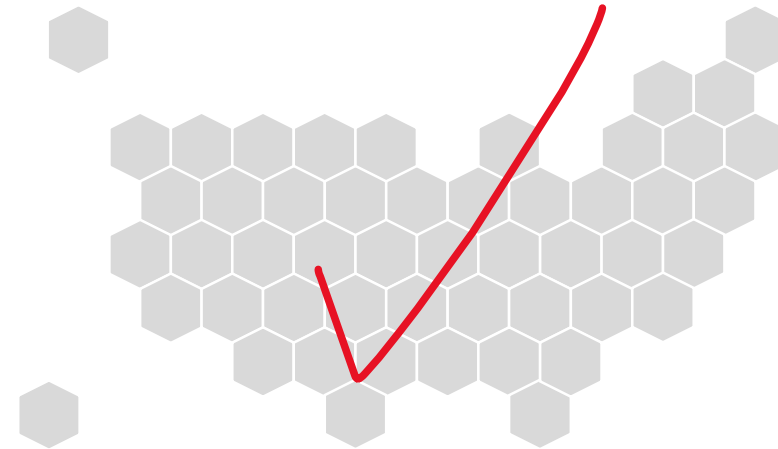
Geographic



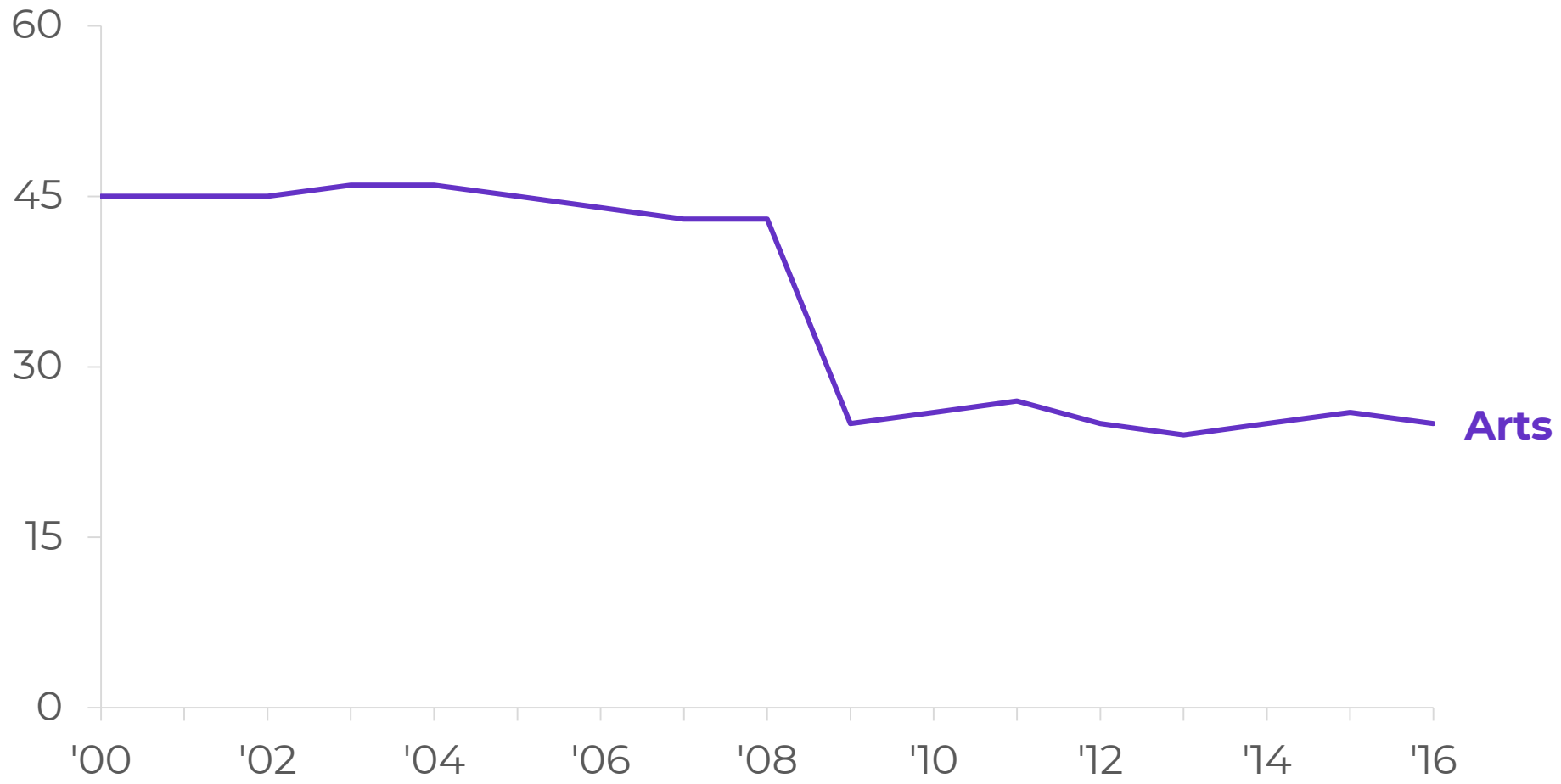
Square



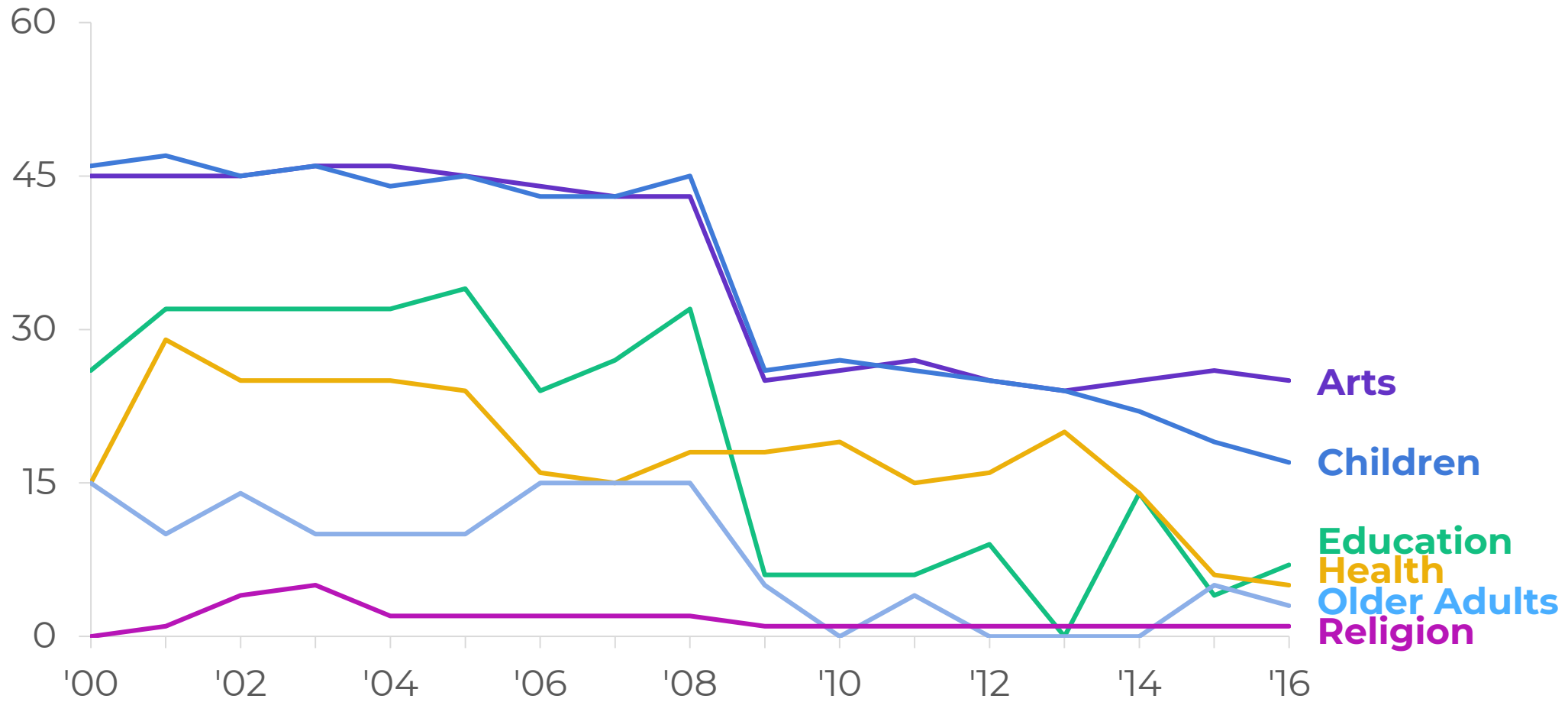
Hex



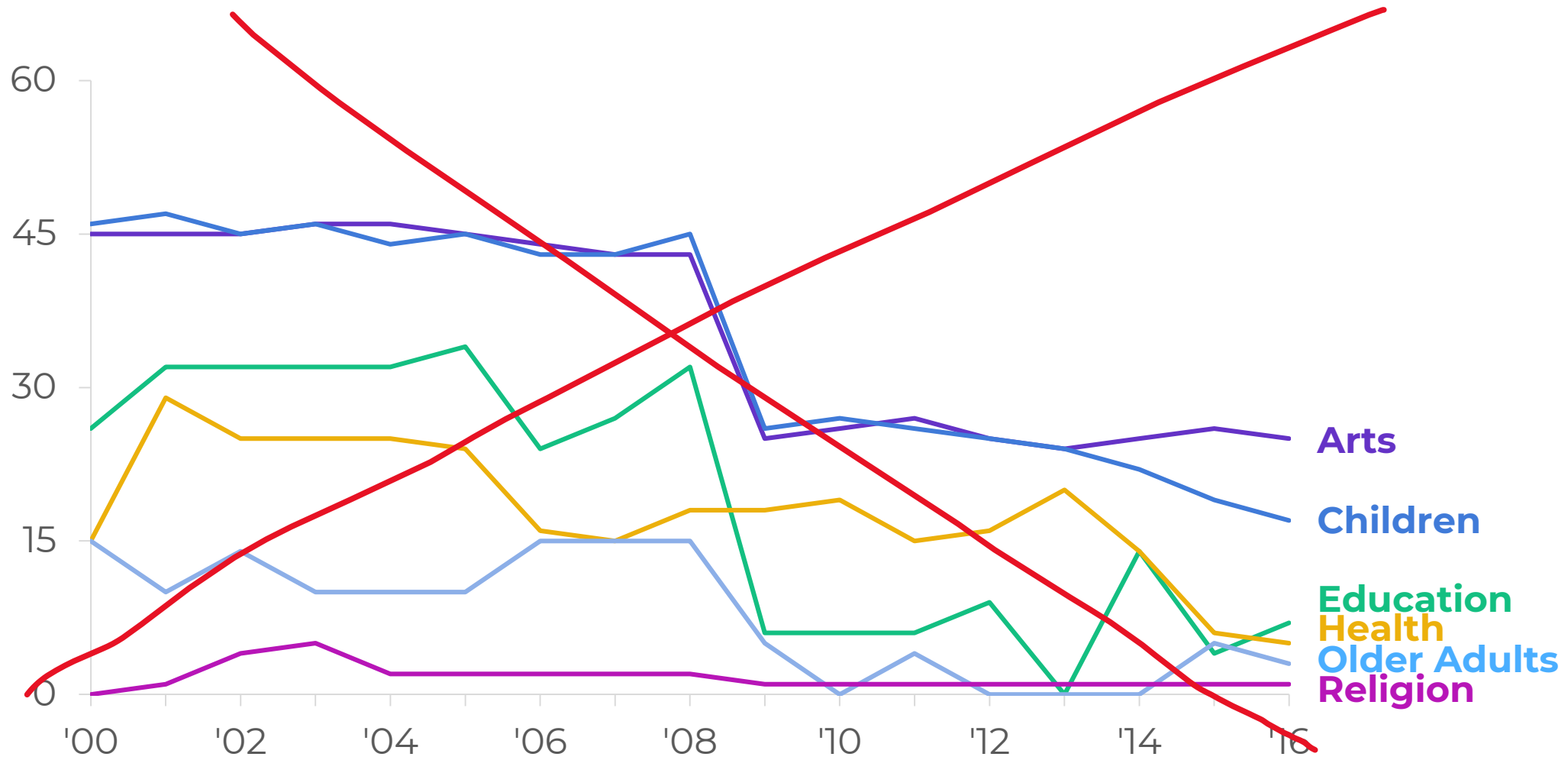
Line



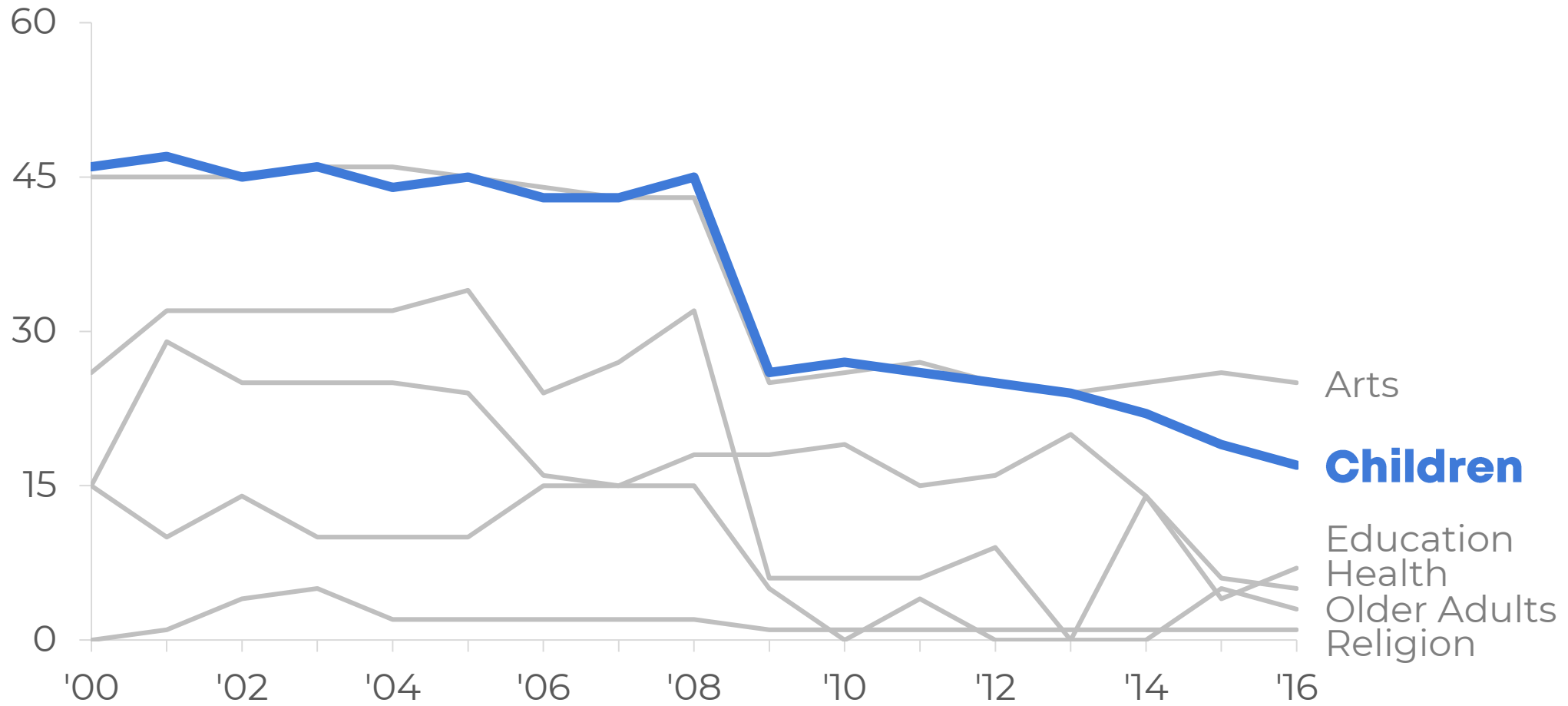
Spaghetti Line...



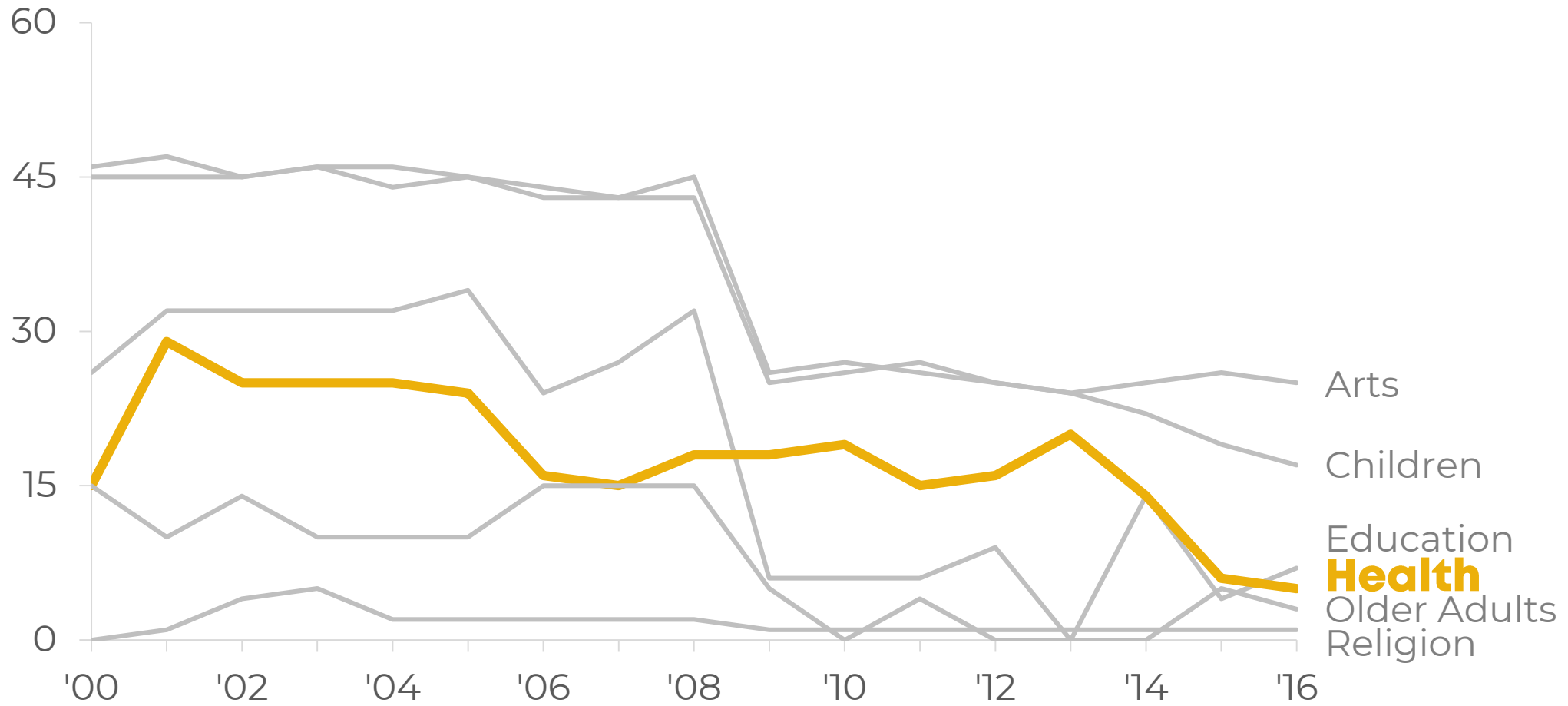
Spaghetti Line...



...with Highlighting

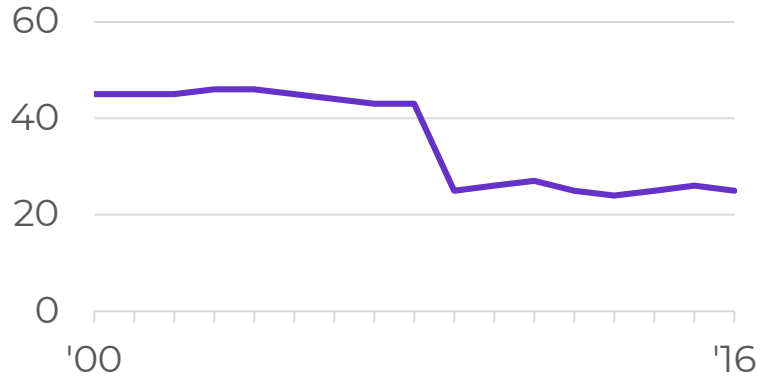


...with Highlighting

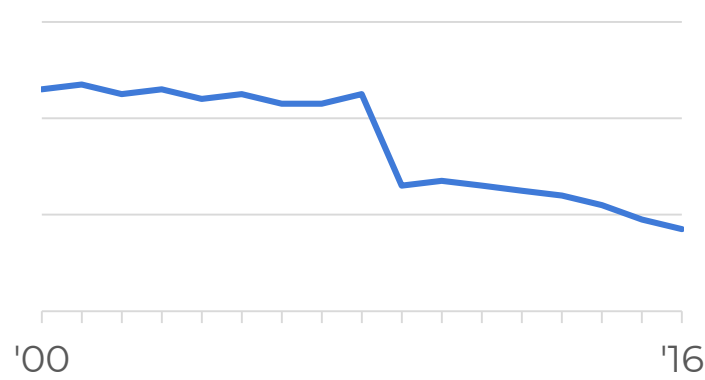


...into Small Multiples

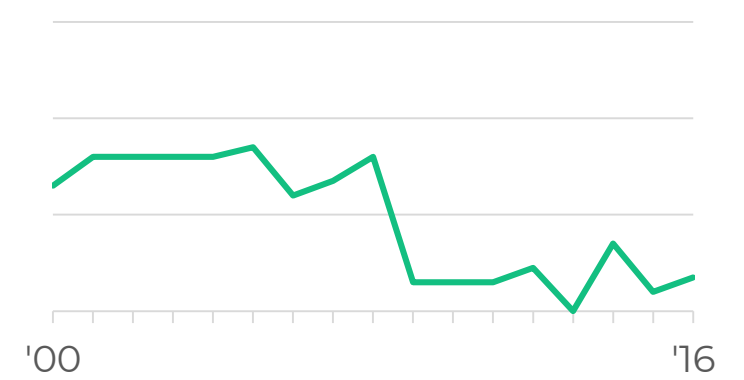
Arts



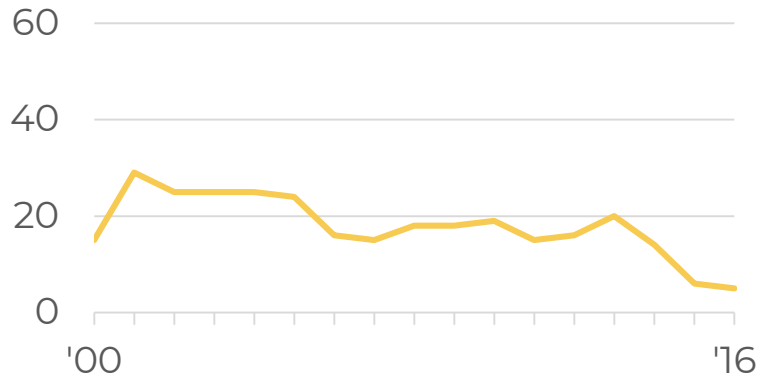
Children



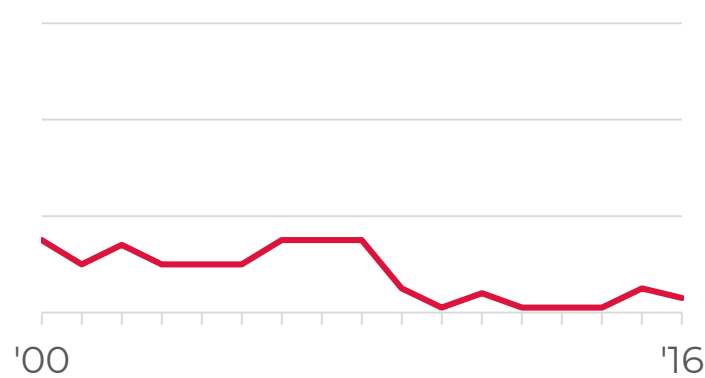
Education



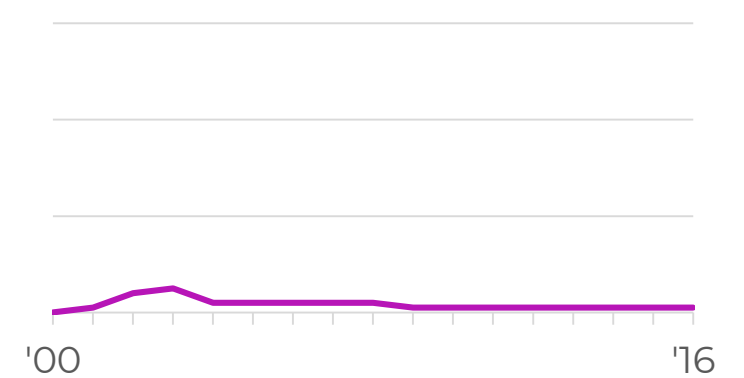
Health



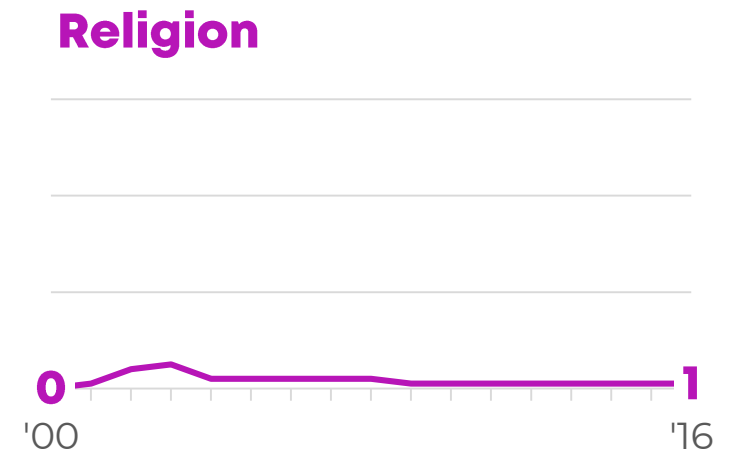
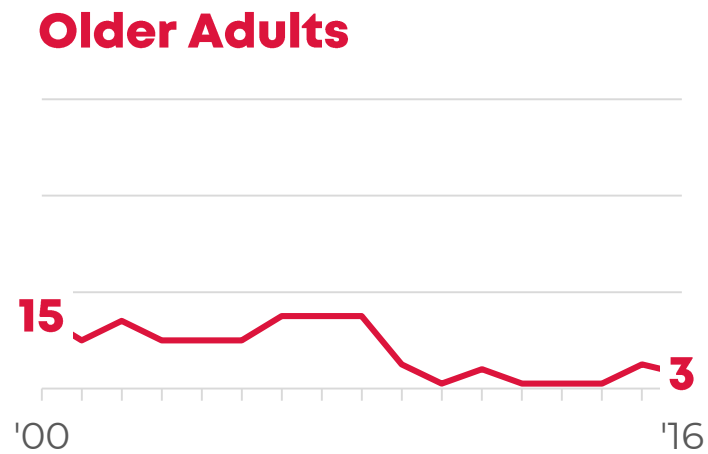
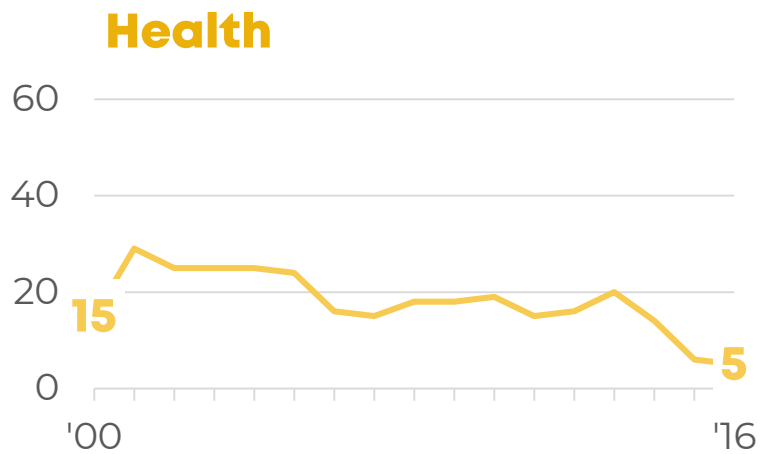
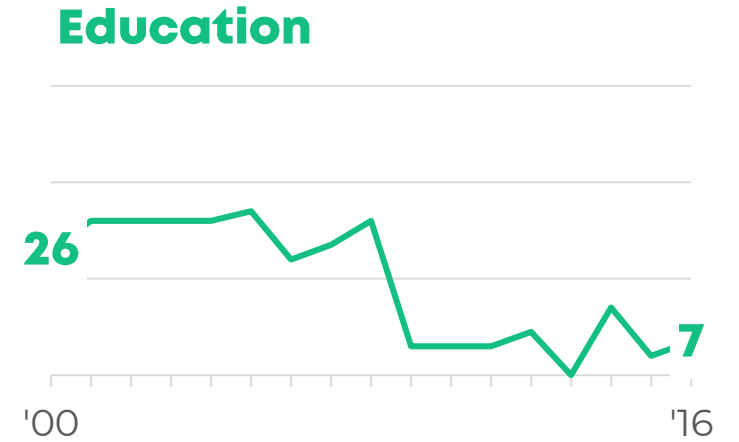
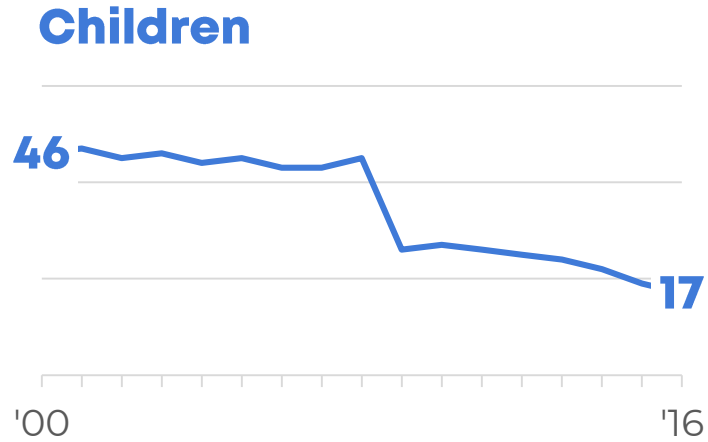
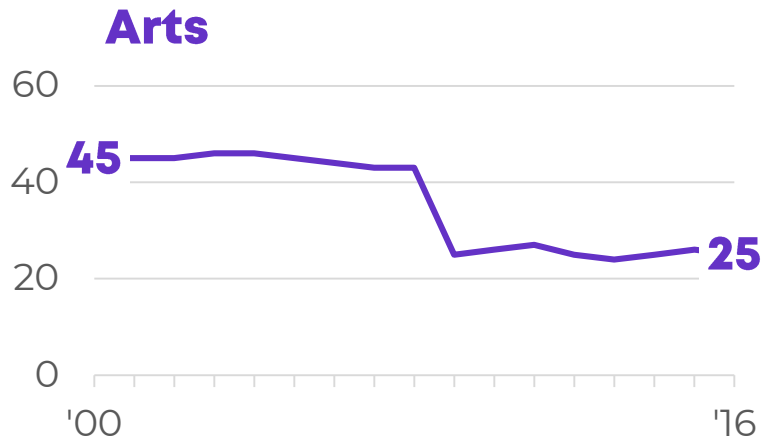
Older Adults



Religion

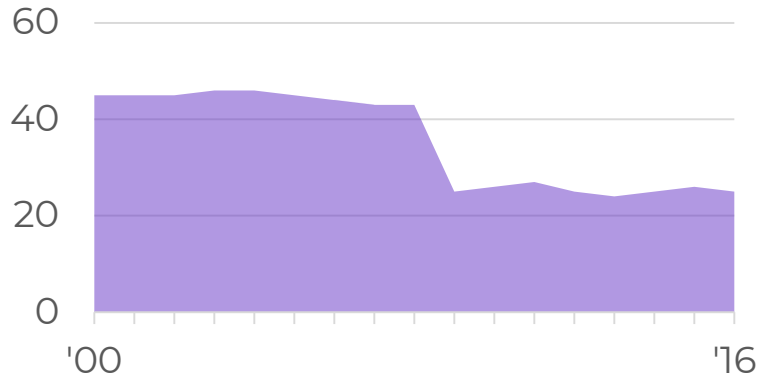


...into Small Multiples

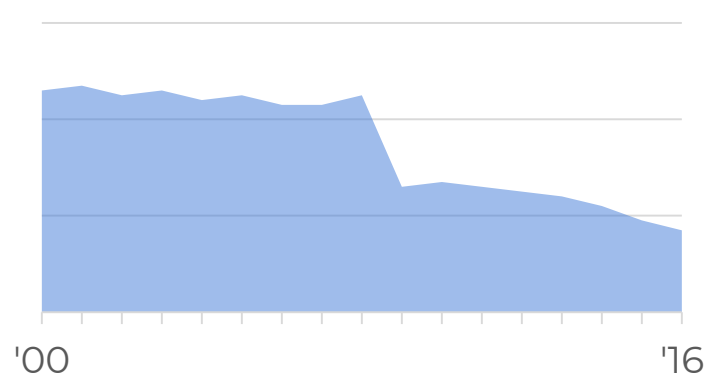


...into Small Multiples

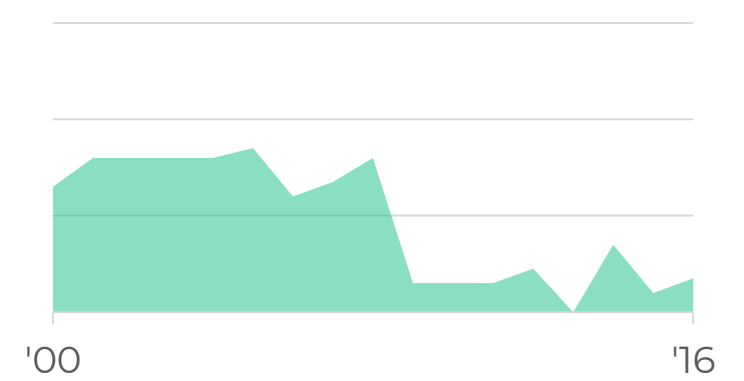
Arts



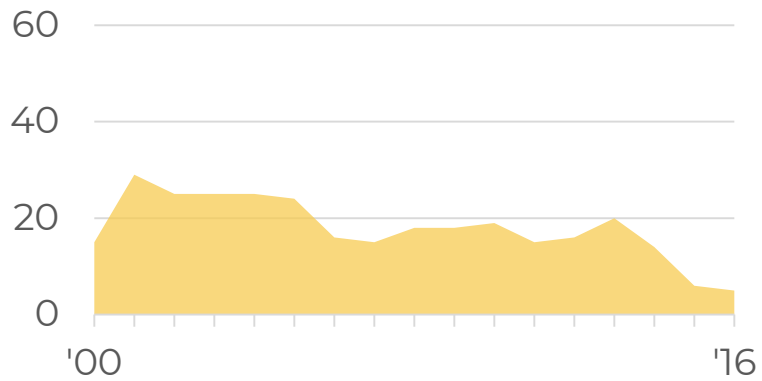
Children



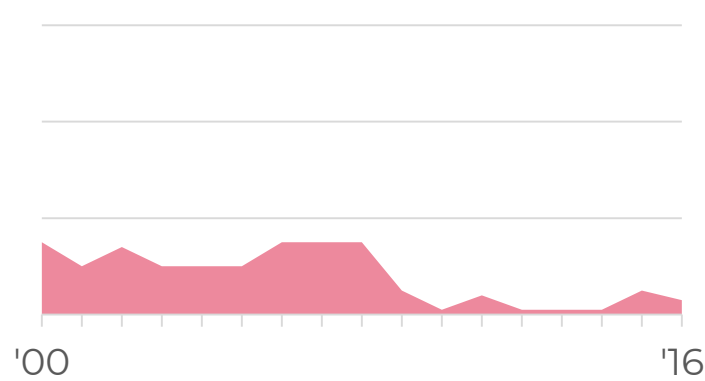
Education



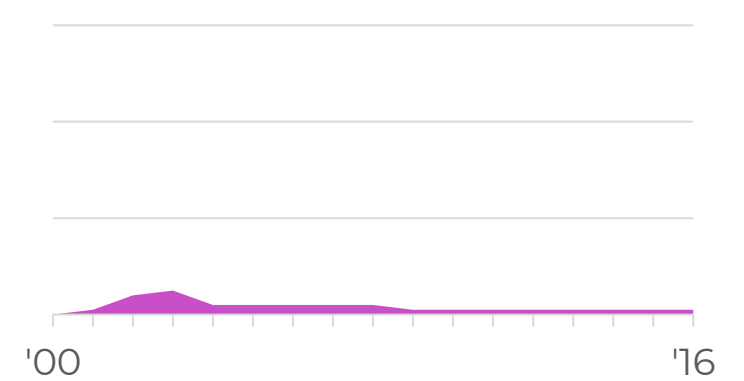
Health



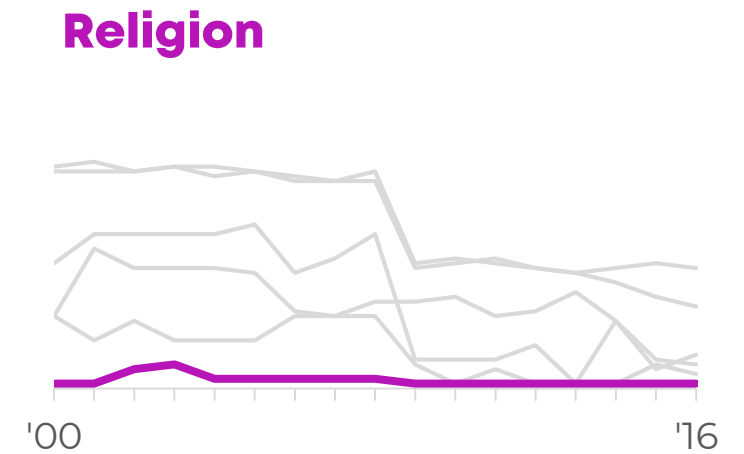
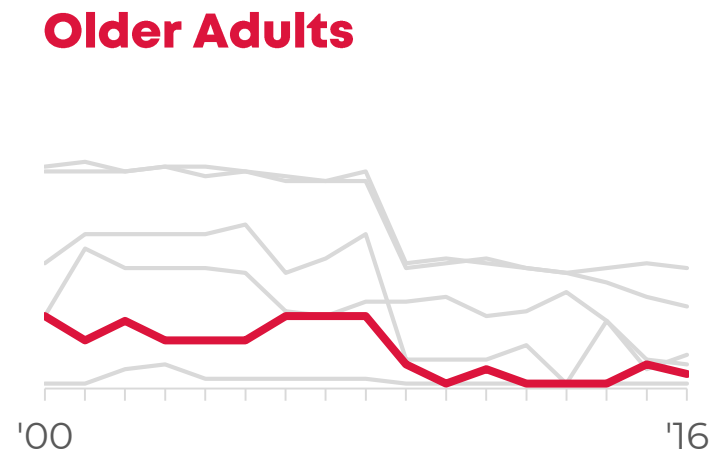
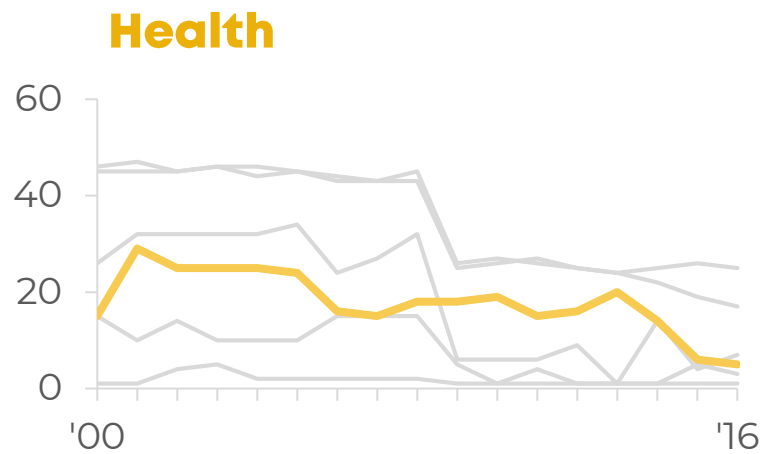
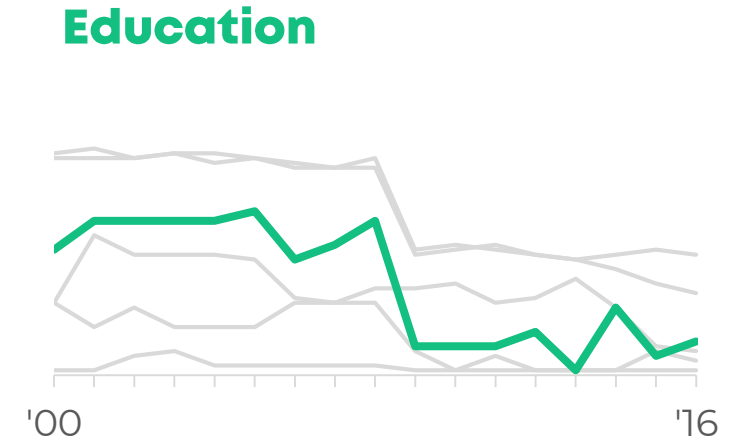
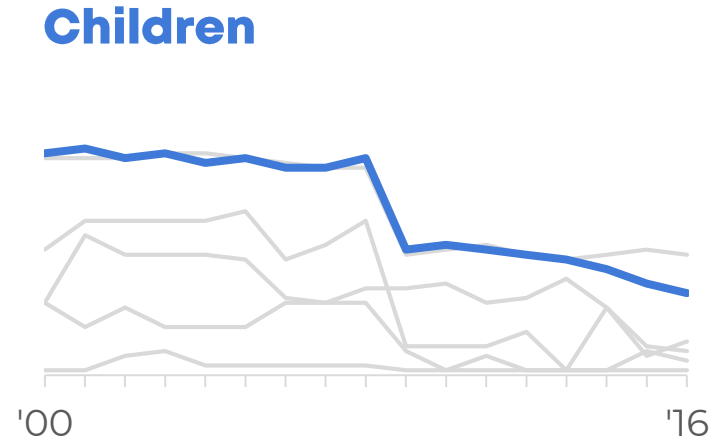
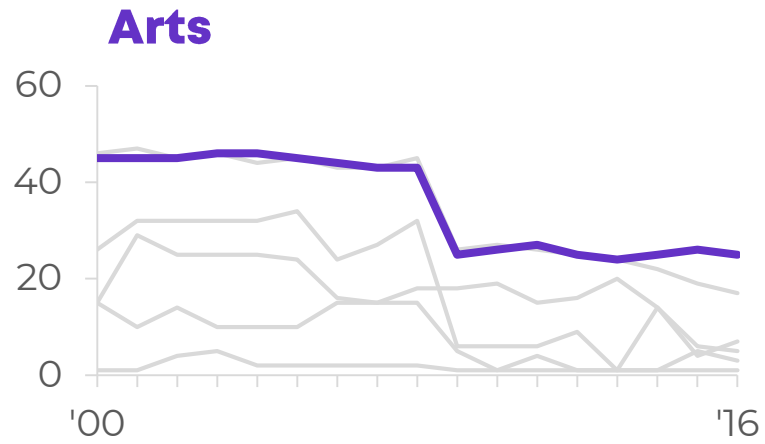
Older Adults



Religion

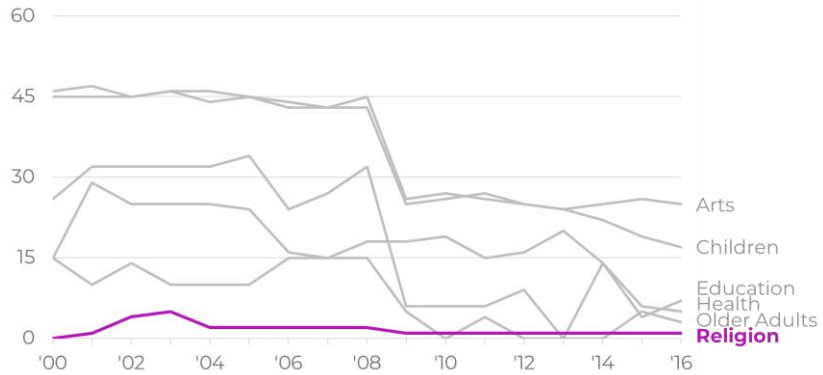


...into Small Multiples with Highlighting

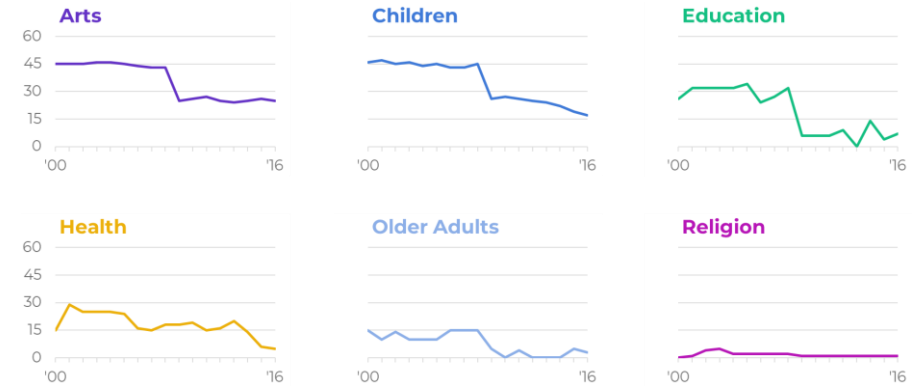


3+ Points in Time

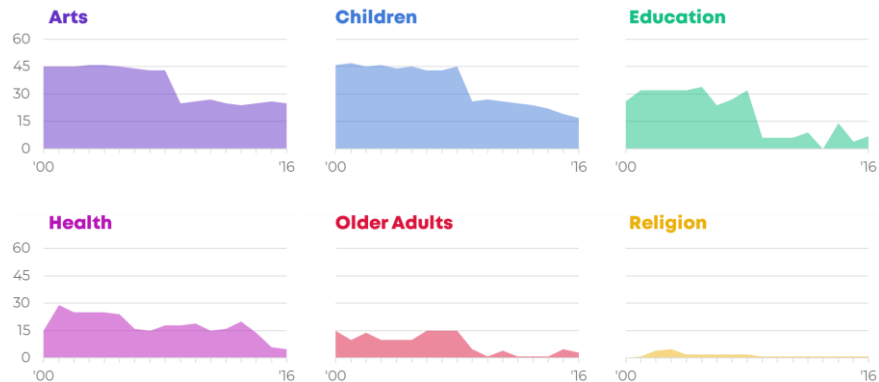
Highlighting



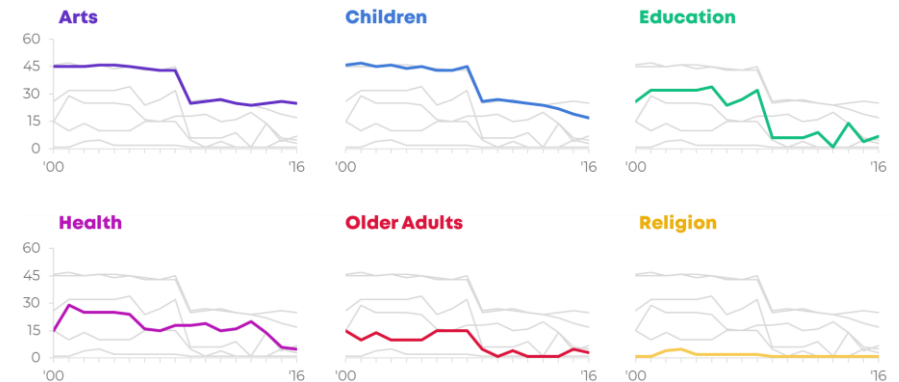
Small Multiples



Small Multiples Area



Small Multiples with Highlighting



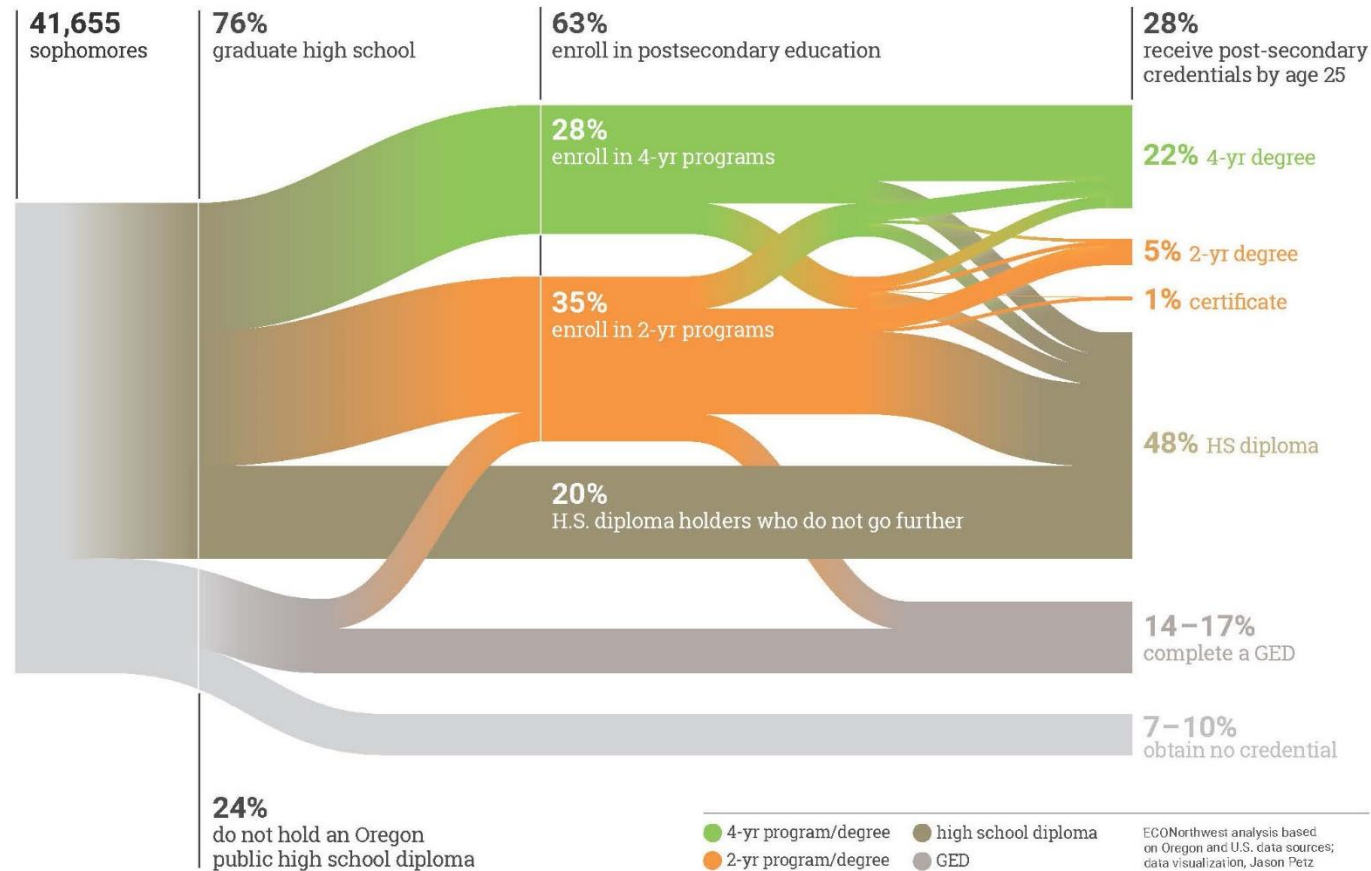
Sankey Diagrams

The Education Pathway

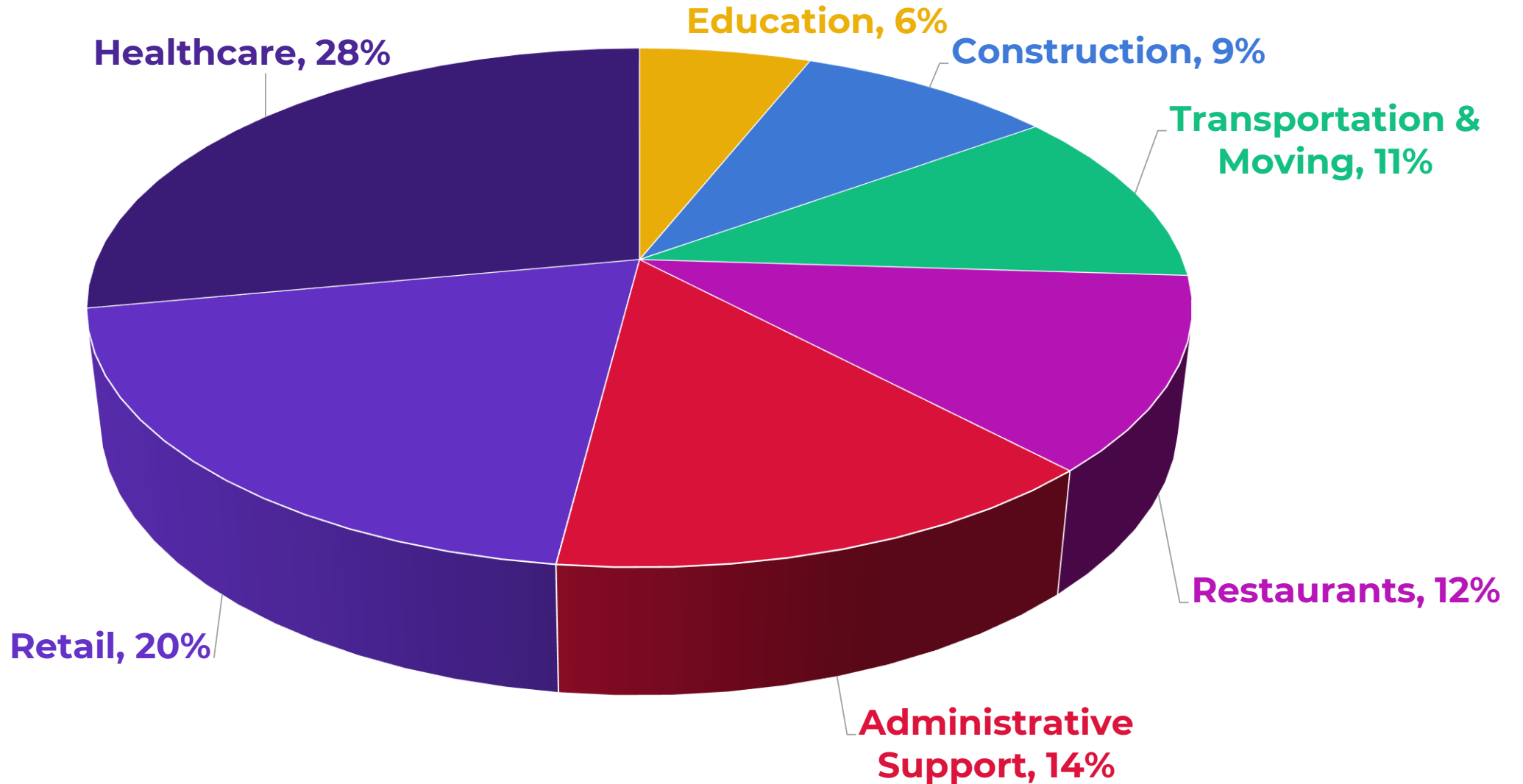
OREGON LEARNS★

Where the Oregon public high school class of 2006* went over the next nine years

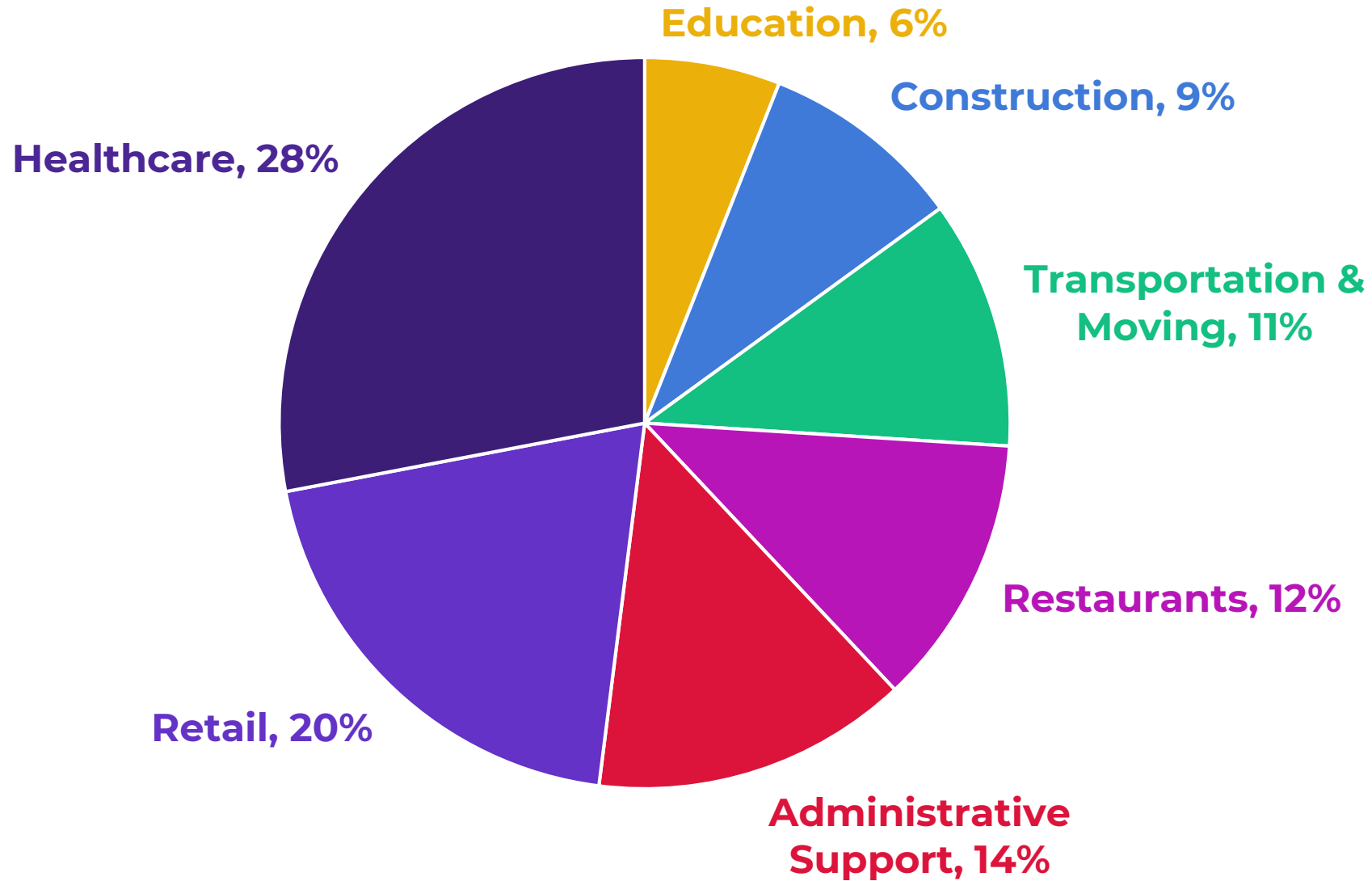
*sophomores in 2003-04



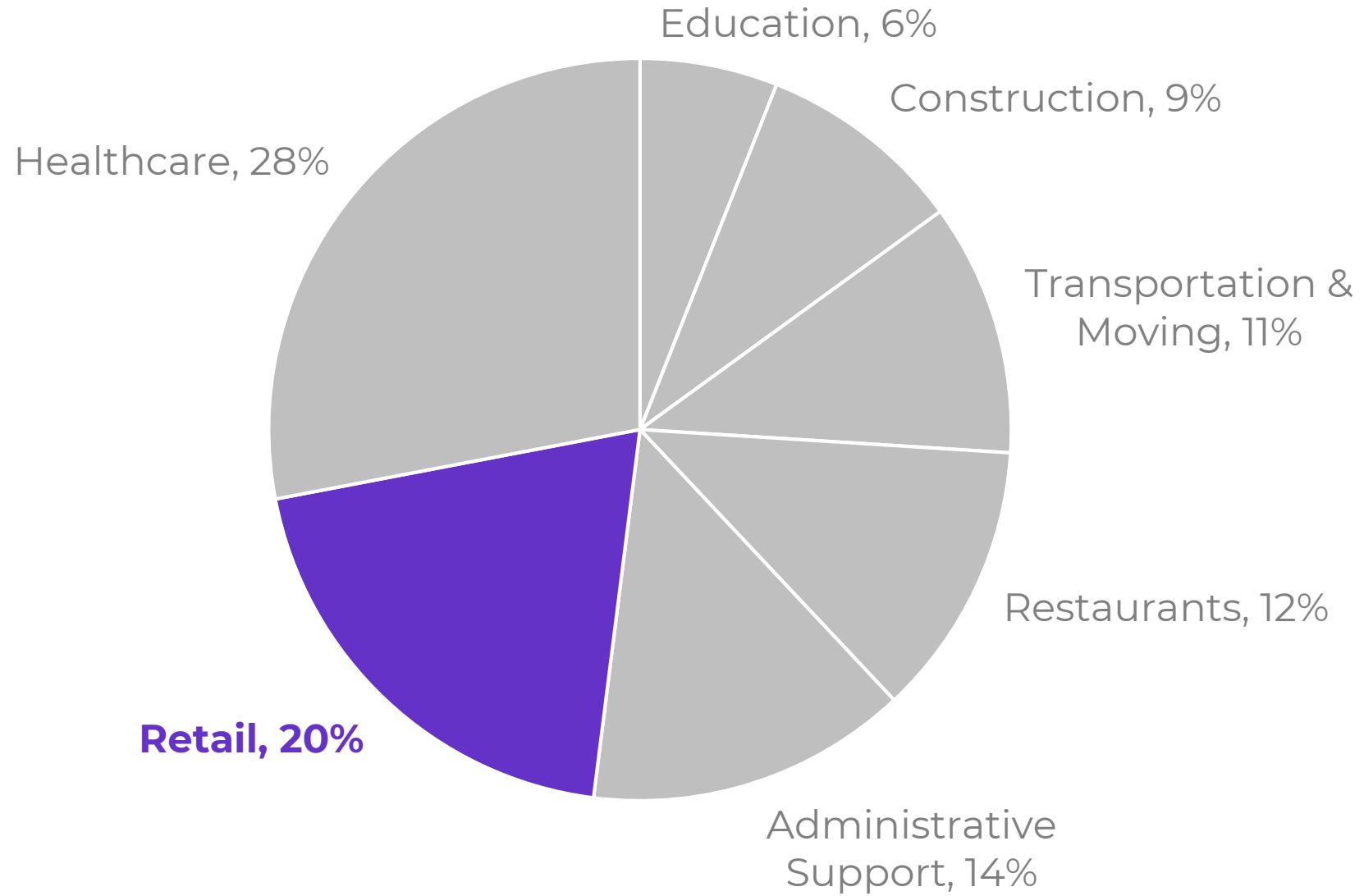
Participants Working in Each Industry



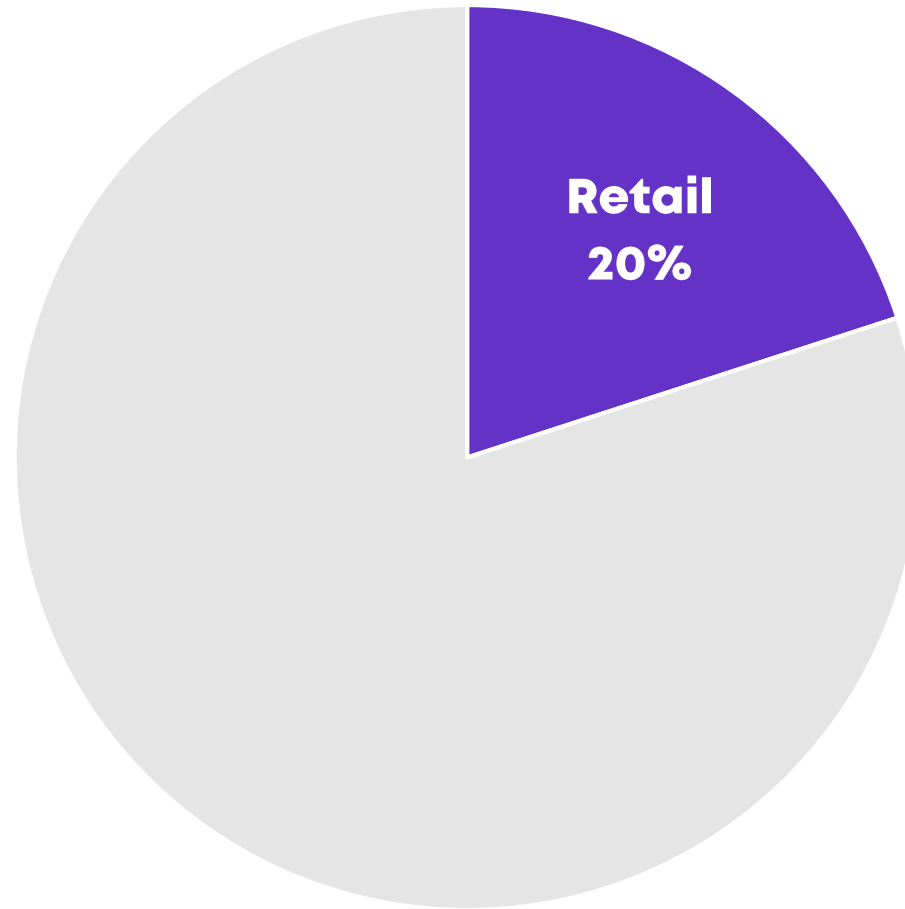
Participants Working in Each Industry



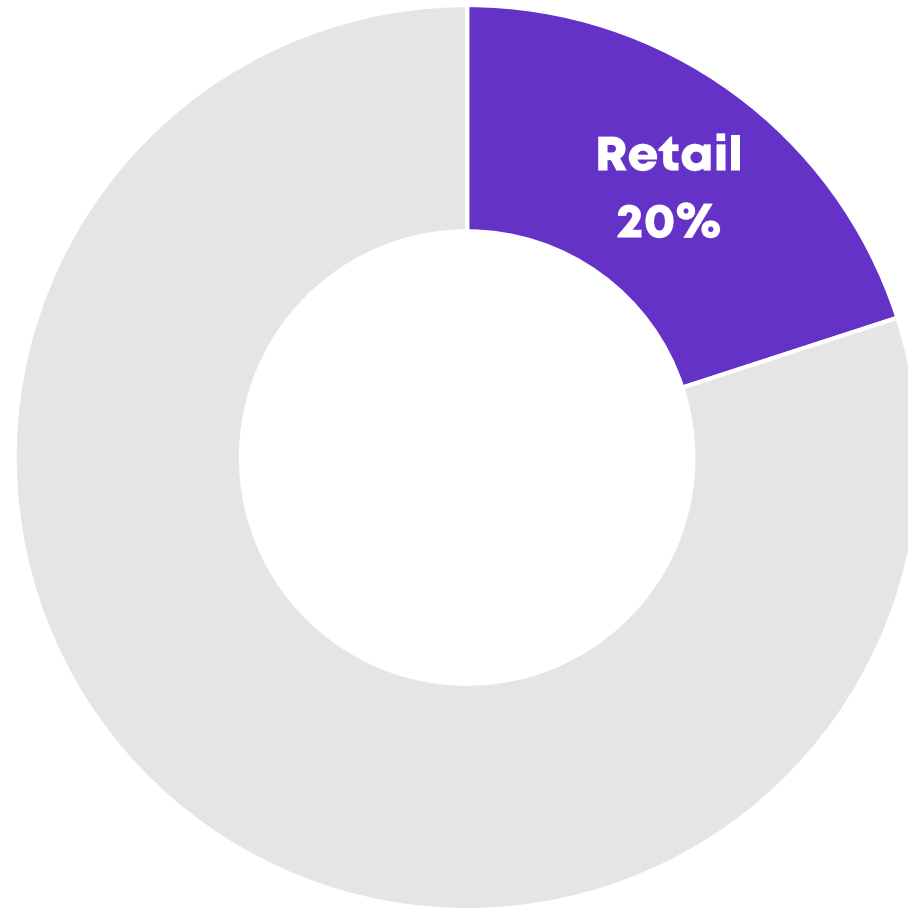
Participants Working in Each Industry



1 in 5 Participants Worked in Retail



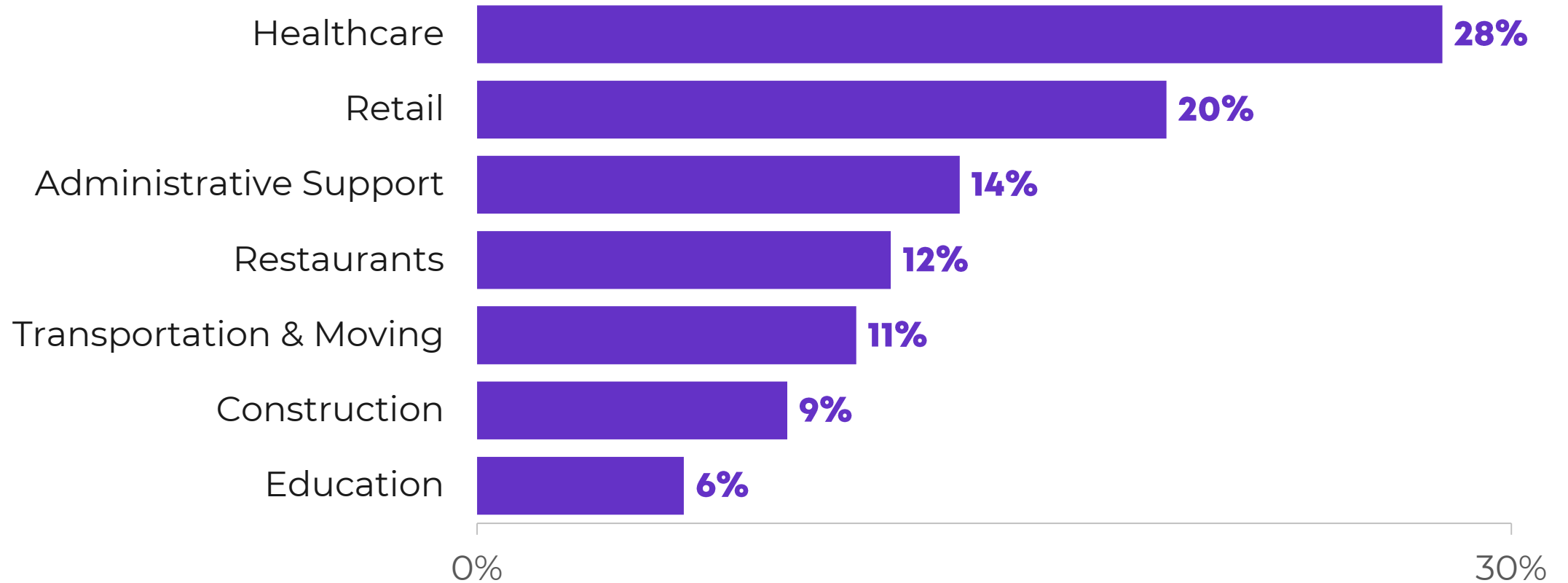
1 in 5 Participants Worked in Retail



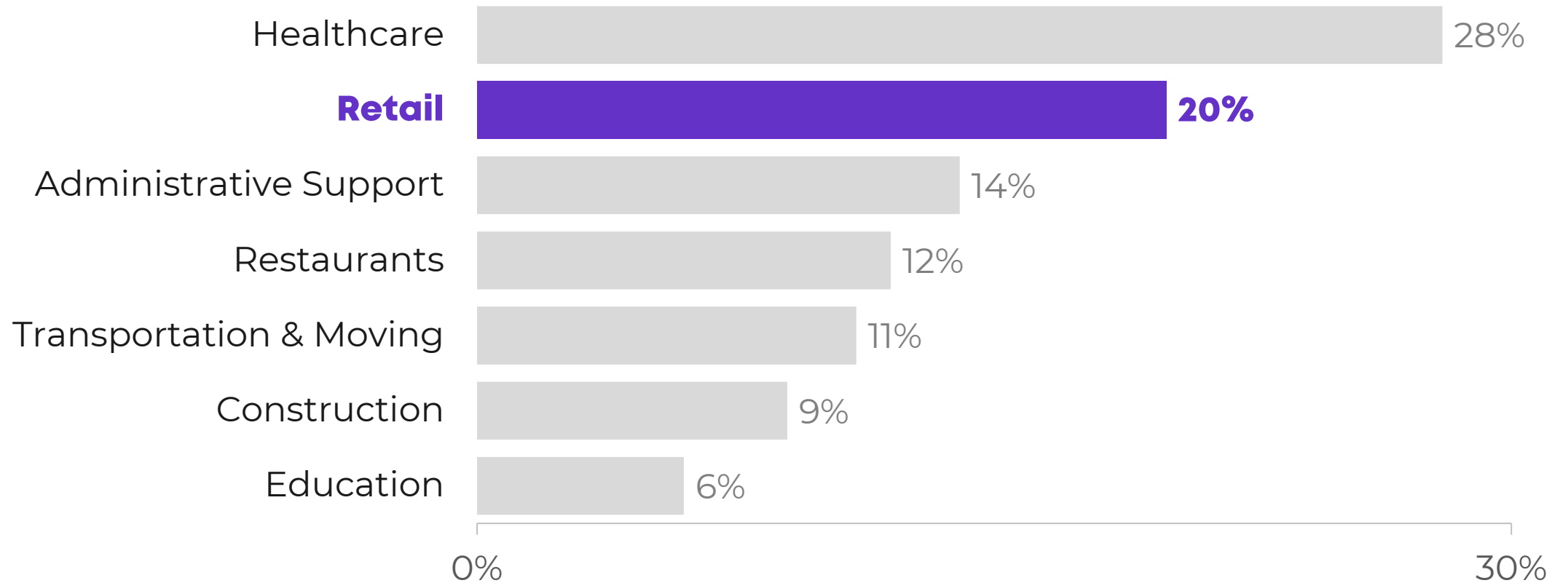
1 in 5 Participants Worked in Retail



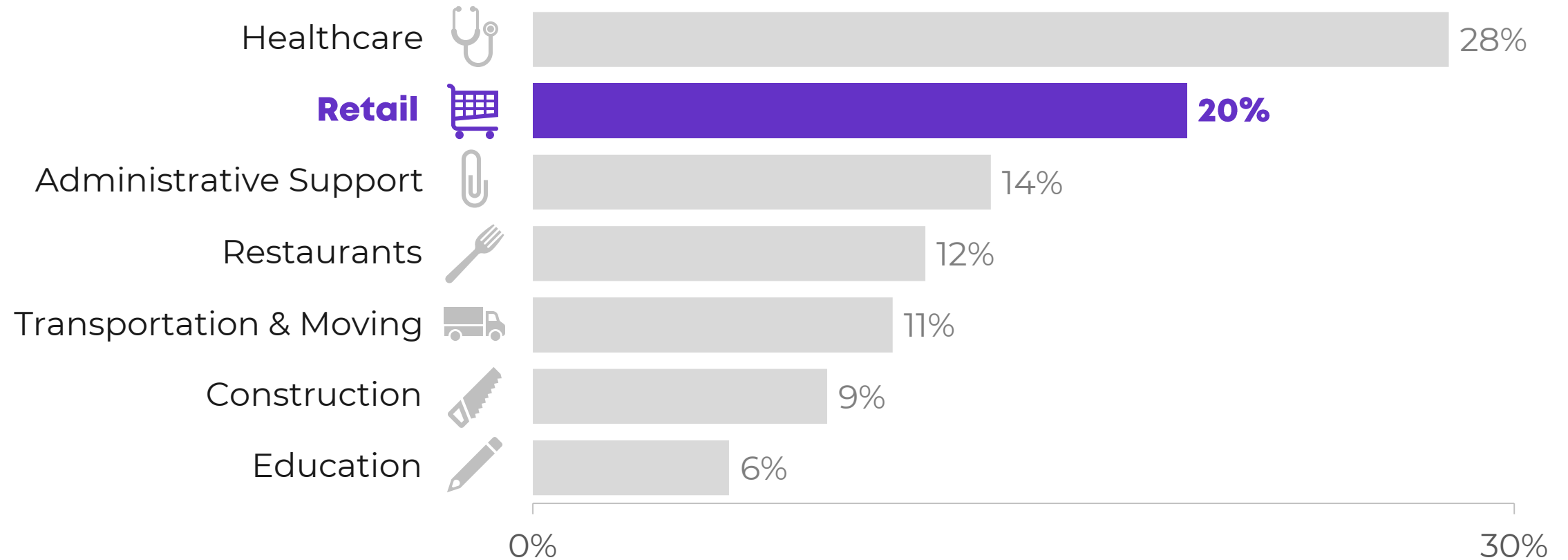
Participants Working in Each Industry



1 in 5 Participants Worked in Retail



1 in 5 Participants Worked in Retail





Analyze
Your
Audience



Choose
the Right
Chart



**Select a
Software
Program**



Declutter



Clarify
with Color



Clarify
with Text

Which Tool? Chartmaker.VisualisingData.com

Not secure | chartmaker.visualisingdata.com

THE CHARTMAKER DIRECTORY

ABOUT

Filter by chart name or AKA

Reference Type: ○ Example ● Solution | Chart Families: ● Categorical ● Hierarchical ● Relational ● Temporal ● Spatial

	Amazon QuickSight	ArcGIS	ChartJS	Charticulator	D3.js	Data Illustrator	Datawrapper	Flourish	FusionCharts	Gephi	Google Charts	Google Data Studio	Highcharts	Infogram	JetPack Data	JMP		
Bar chart	●				●●●●	○	●●●●	○	○		●●	○	●●○	○	●○		●	
Clustered bar chart	●				●	○	●●●●○	○	○		●●				○	○		●
Bullet chart				●	●		●●		○									●
Waterfall chart				●	●				○		●		○	○				
Radar chart			○		●				○				○					
Polar chart			●	●	●								○					
Connected dot plot					●●	○	●●●○											
Pictogram					○										○			
Proportional shape chart					●●●○	○		○	○		●							





Analyze
Your
Audience



Choose
the Right
Chart



Select a
Software
Program



Declutter

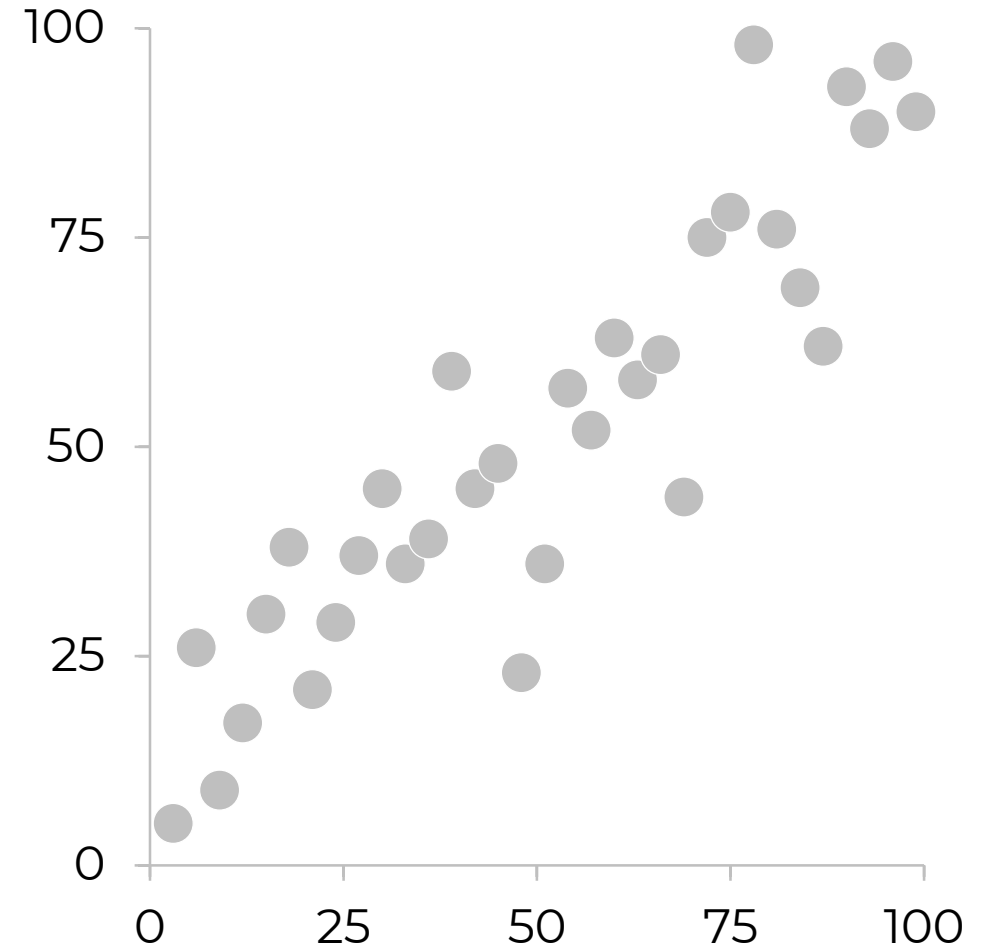
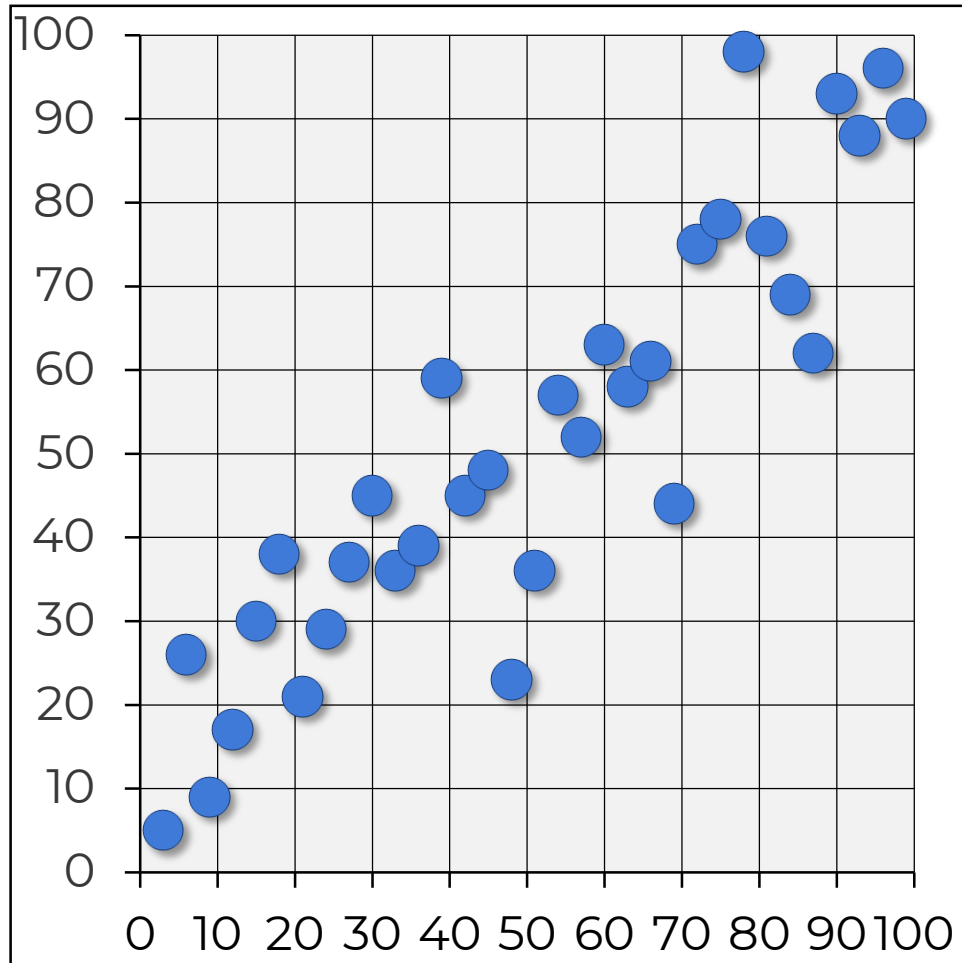


Clarify
with Color

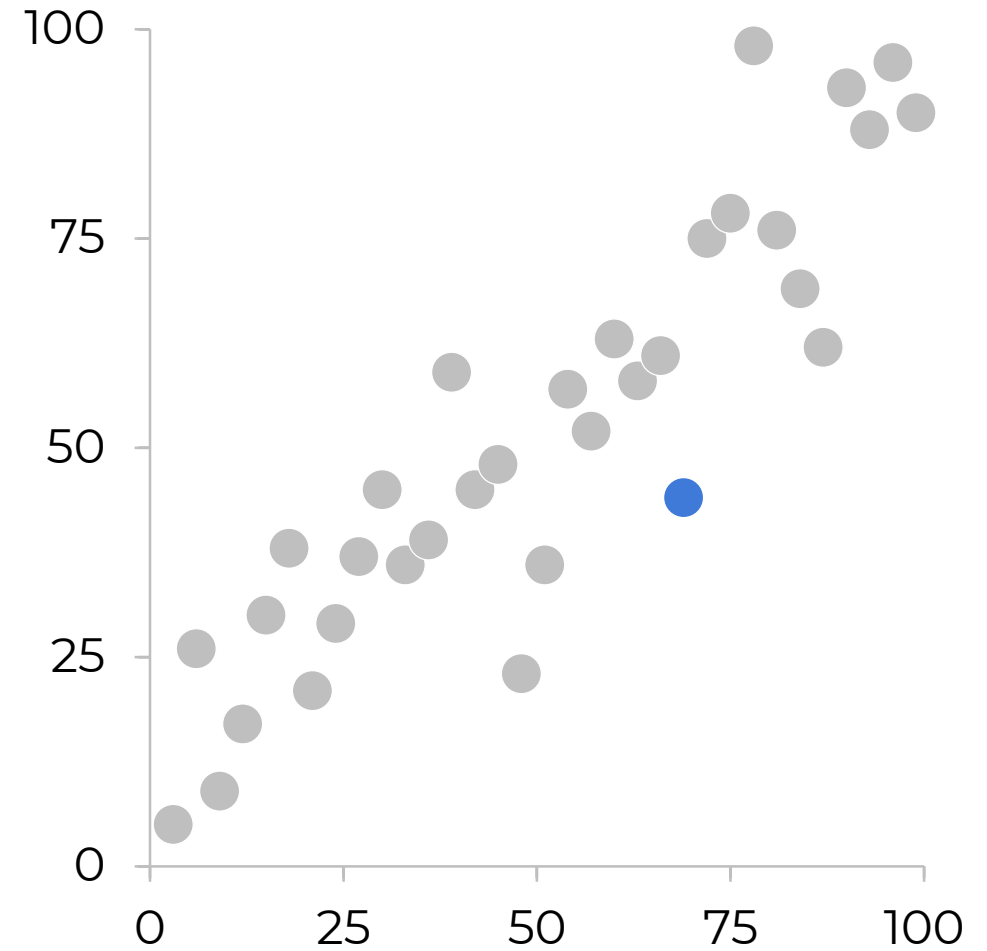
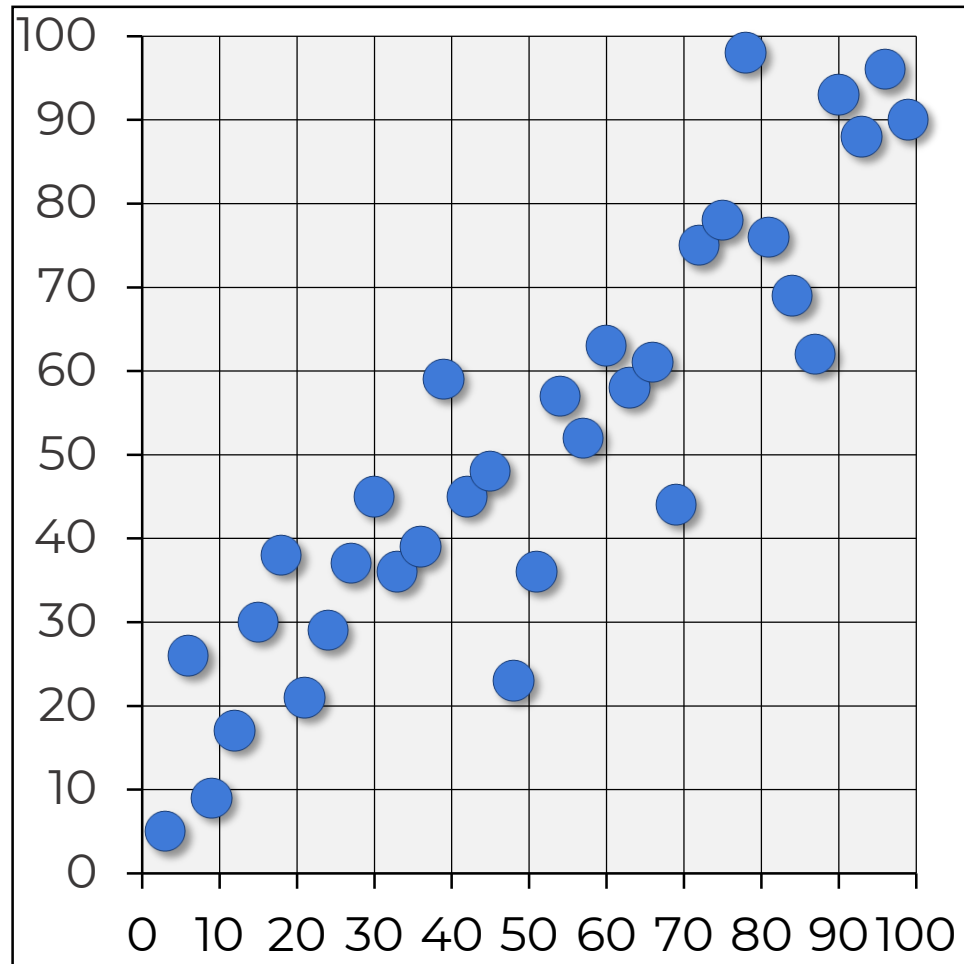


Clarify
with Text

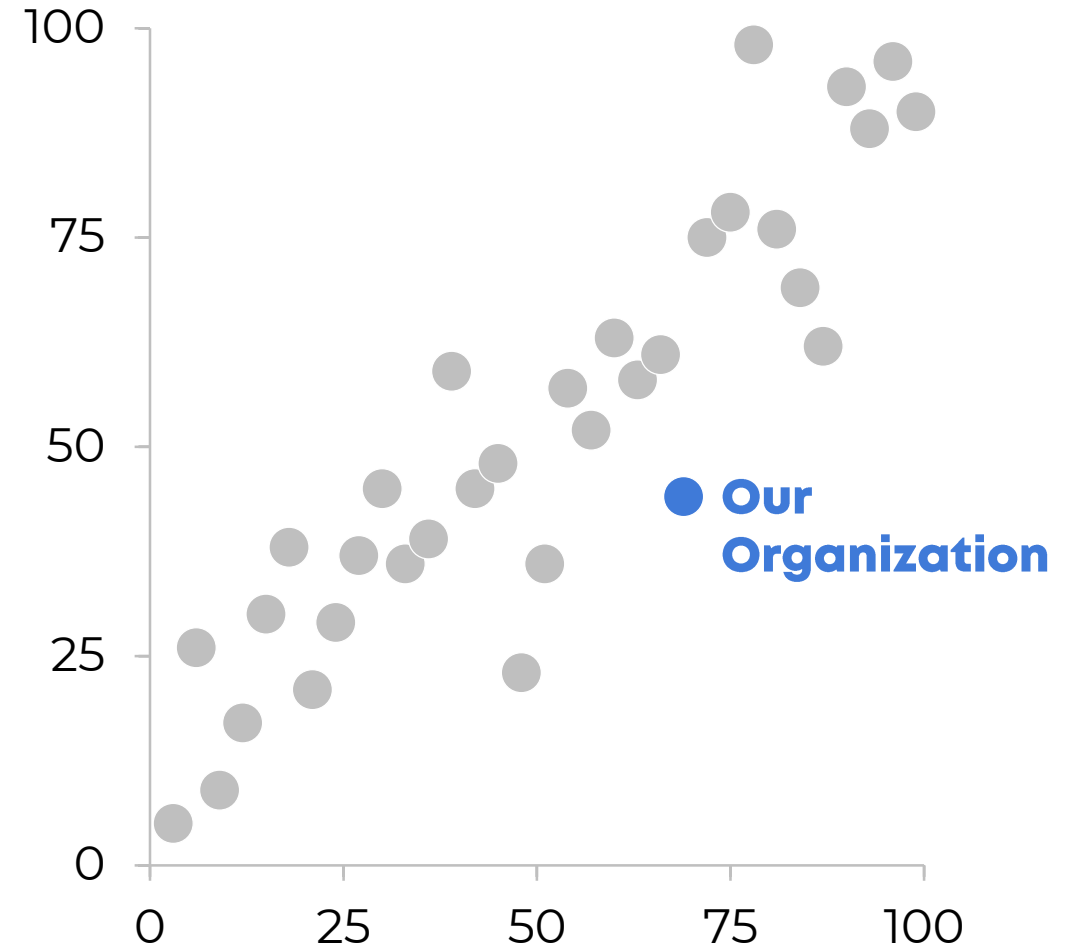
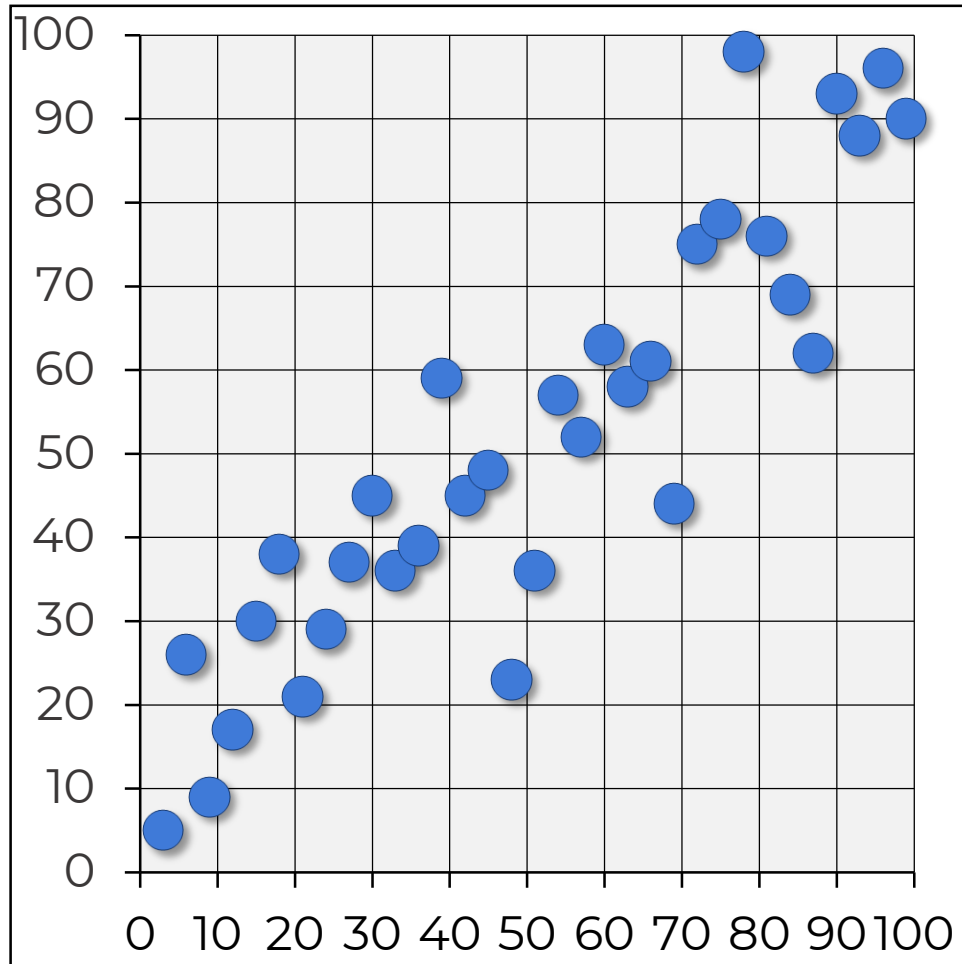
Remove Unnecessary Ink



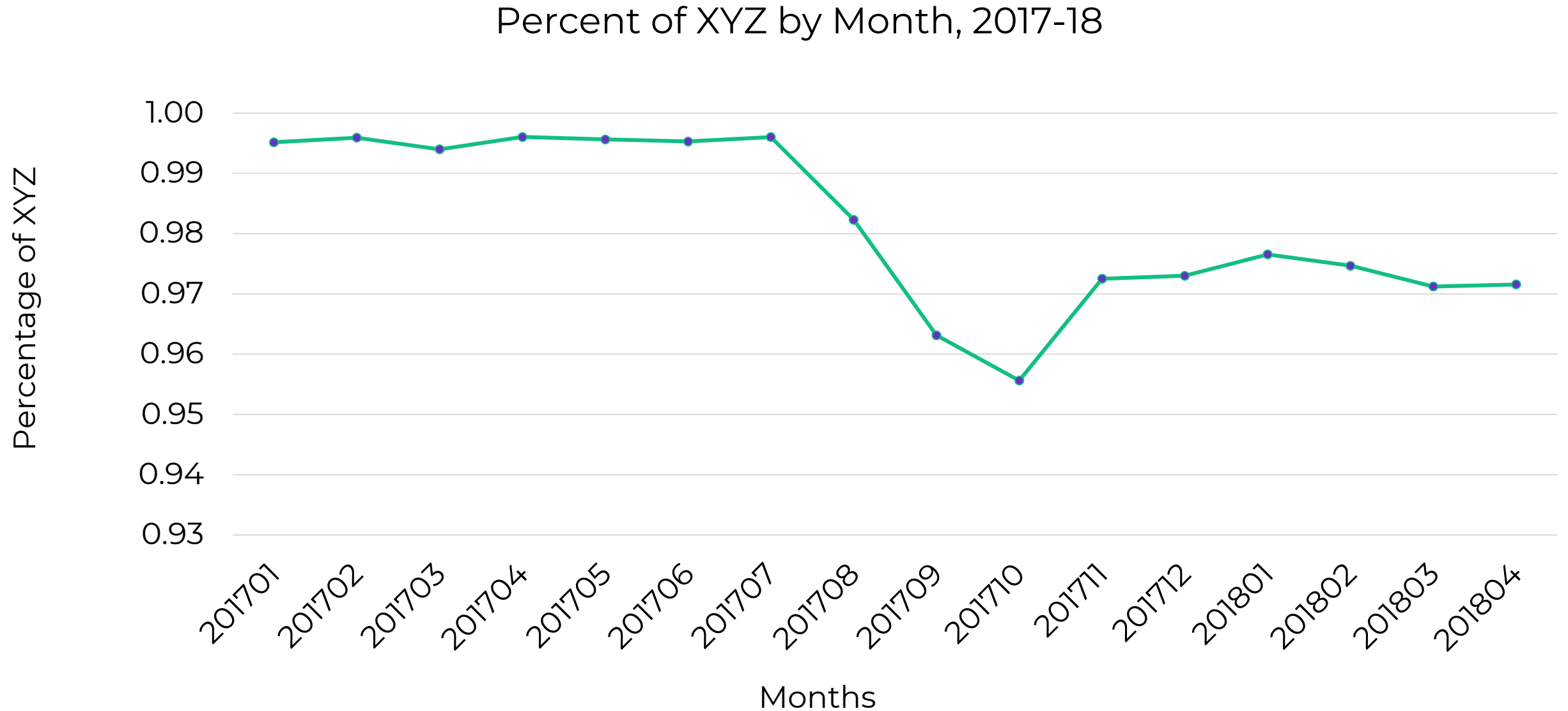
Remove Unnecessary Ink



Remove Unnecessary Ink



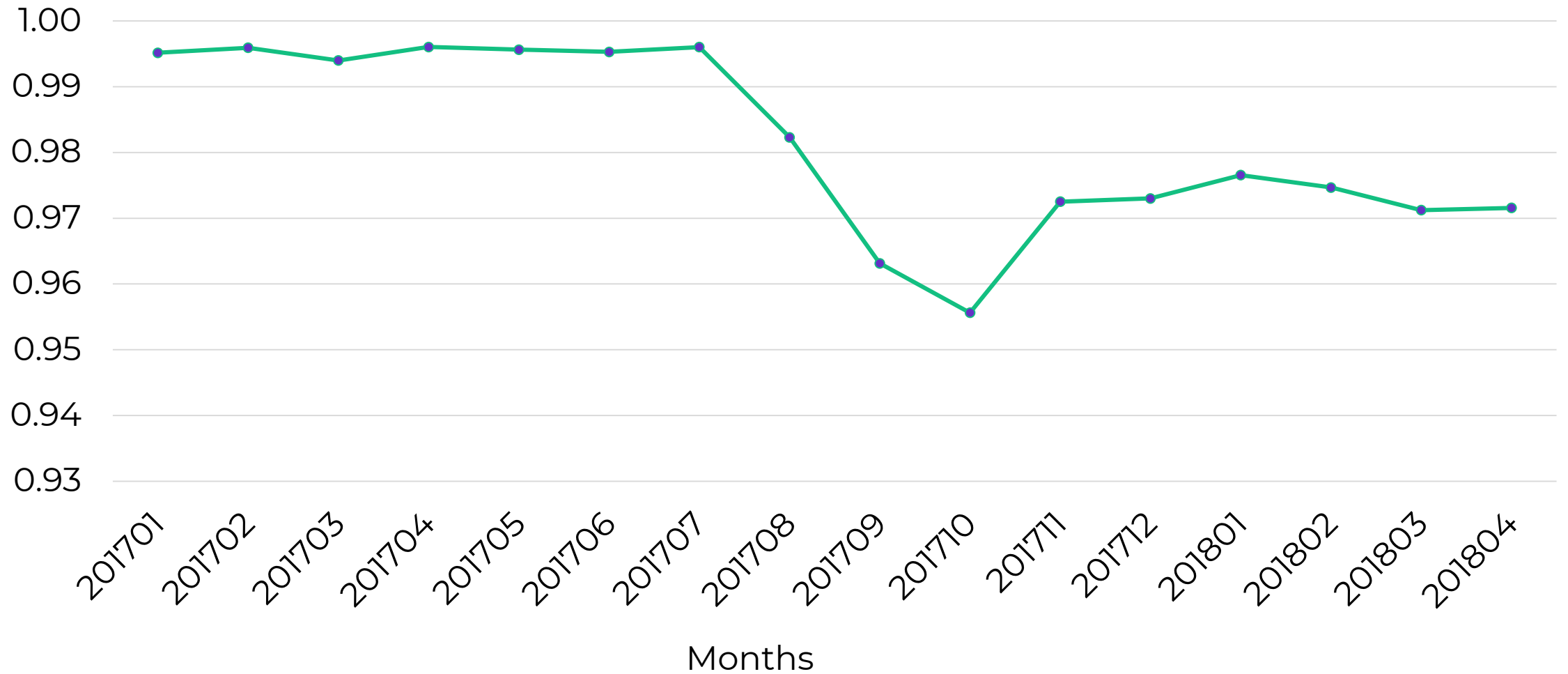
Percentage of XYZ by Month, 2017-18



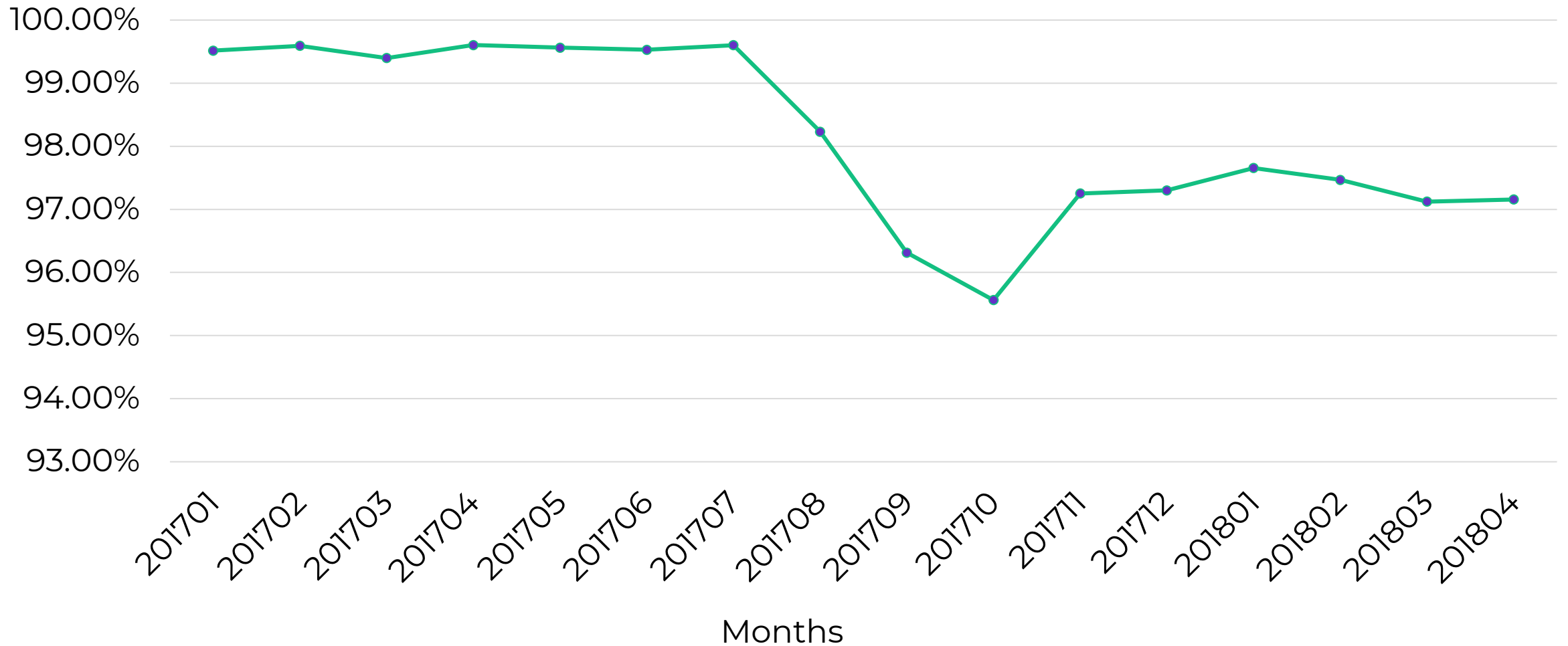
Percentage of XYZ by Month, 2017-18



Percentage of XYZ by Month, 2017-18



Percentage of XYZ by Month, 2017-18



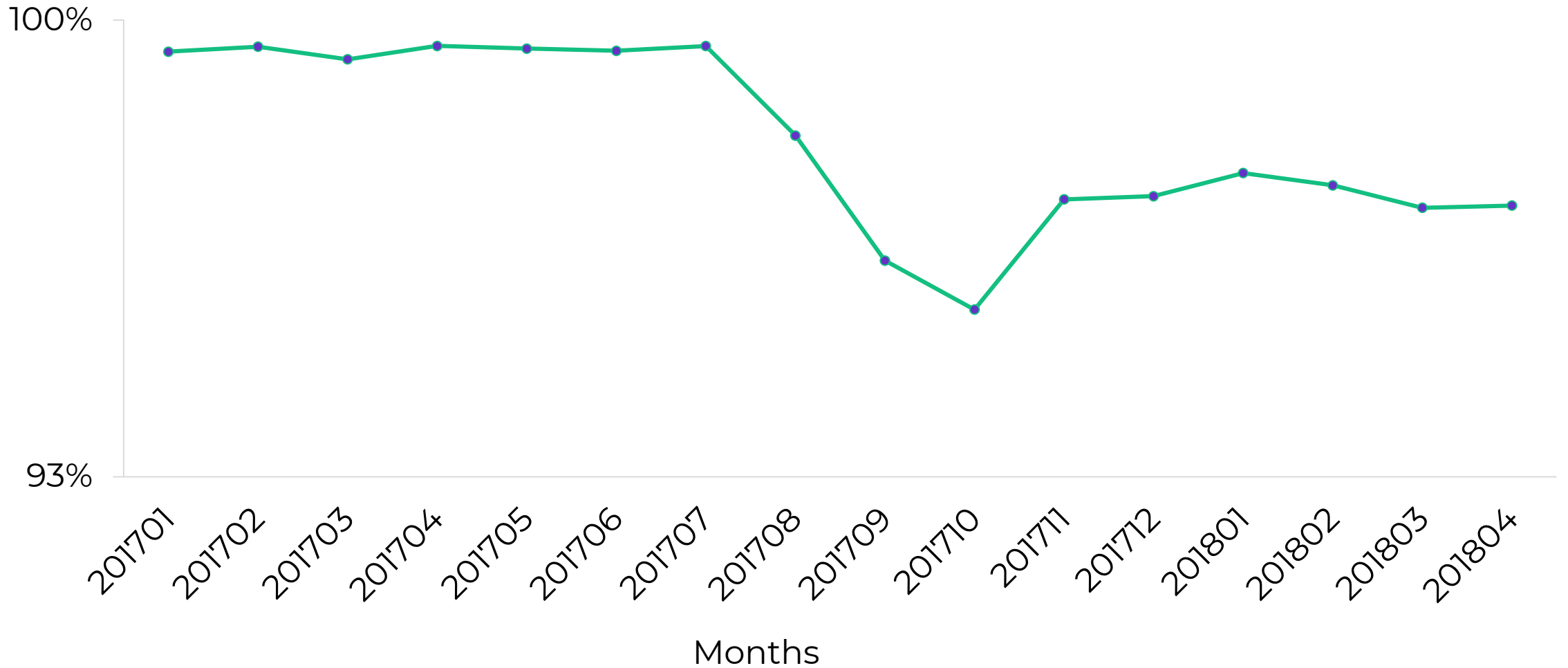
Percentage of XYZ by Month, 2017-18



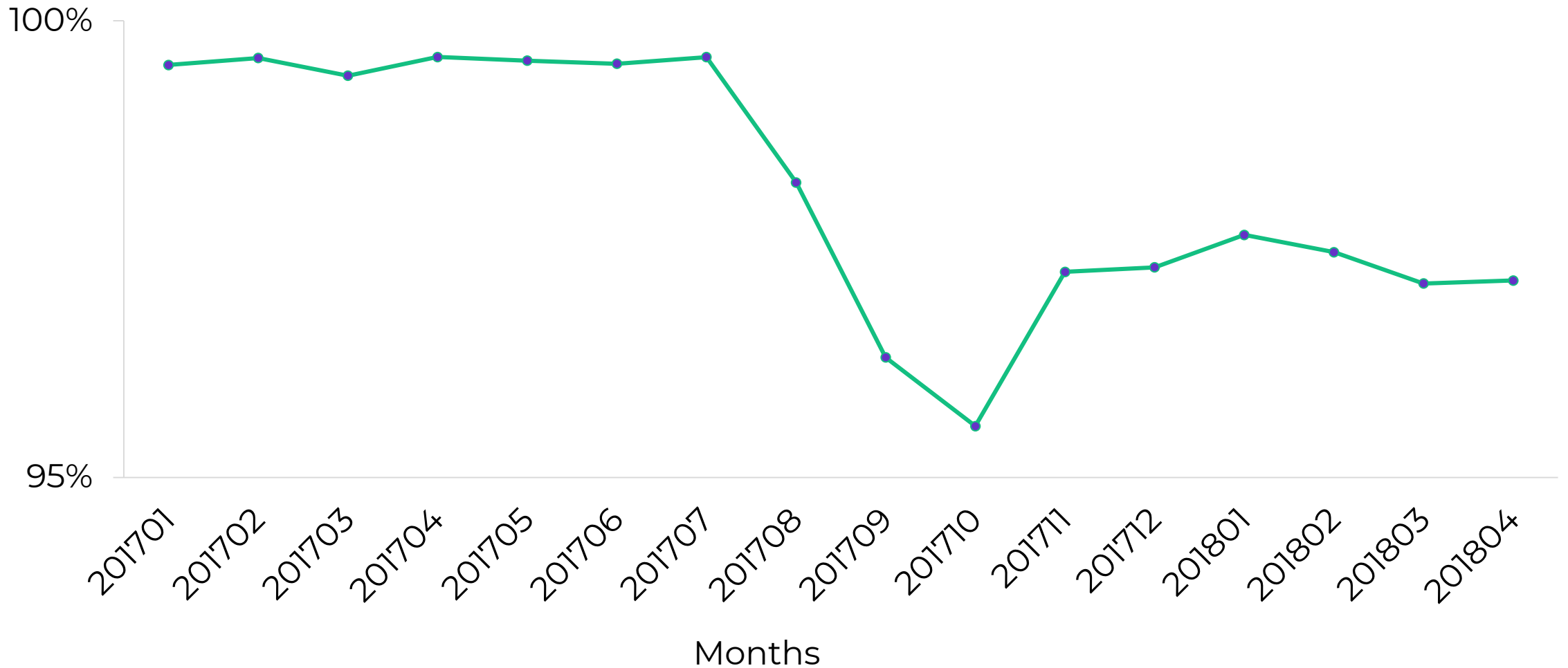
Percentage of XYZ by Month, 2017-18



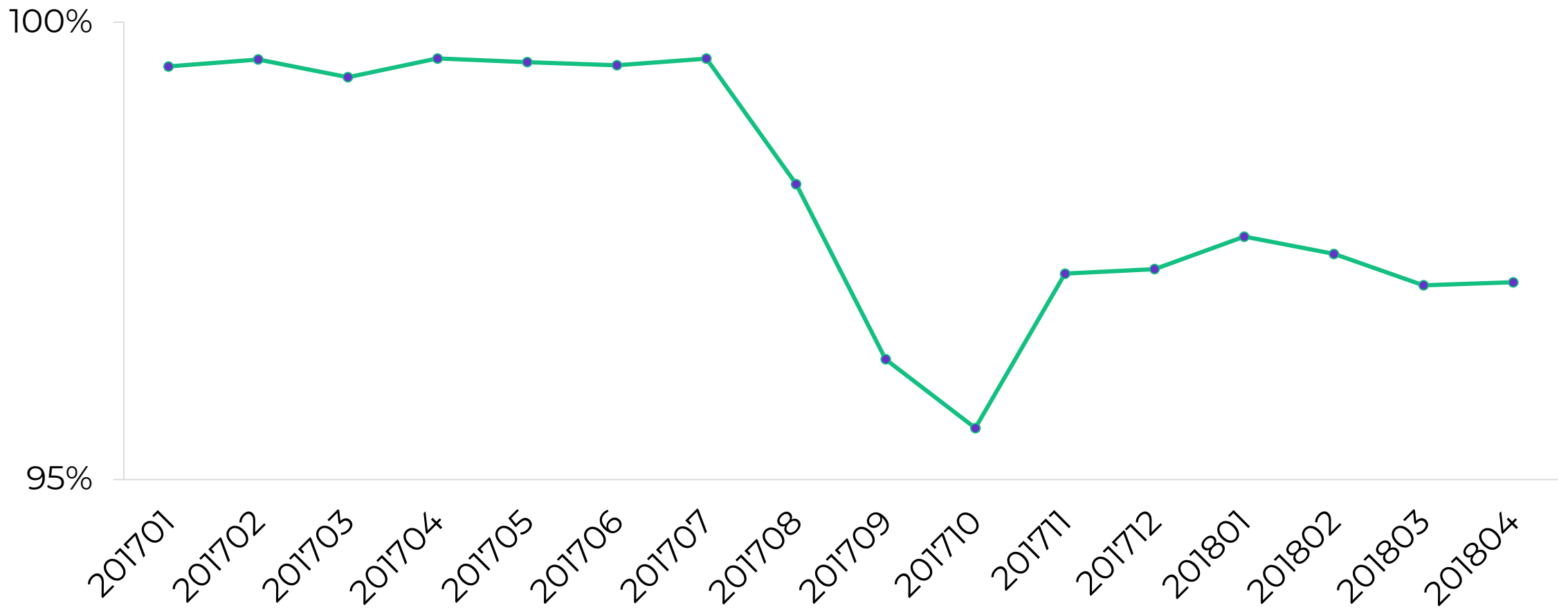
Percentage of XYZ by Month, 2017-18



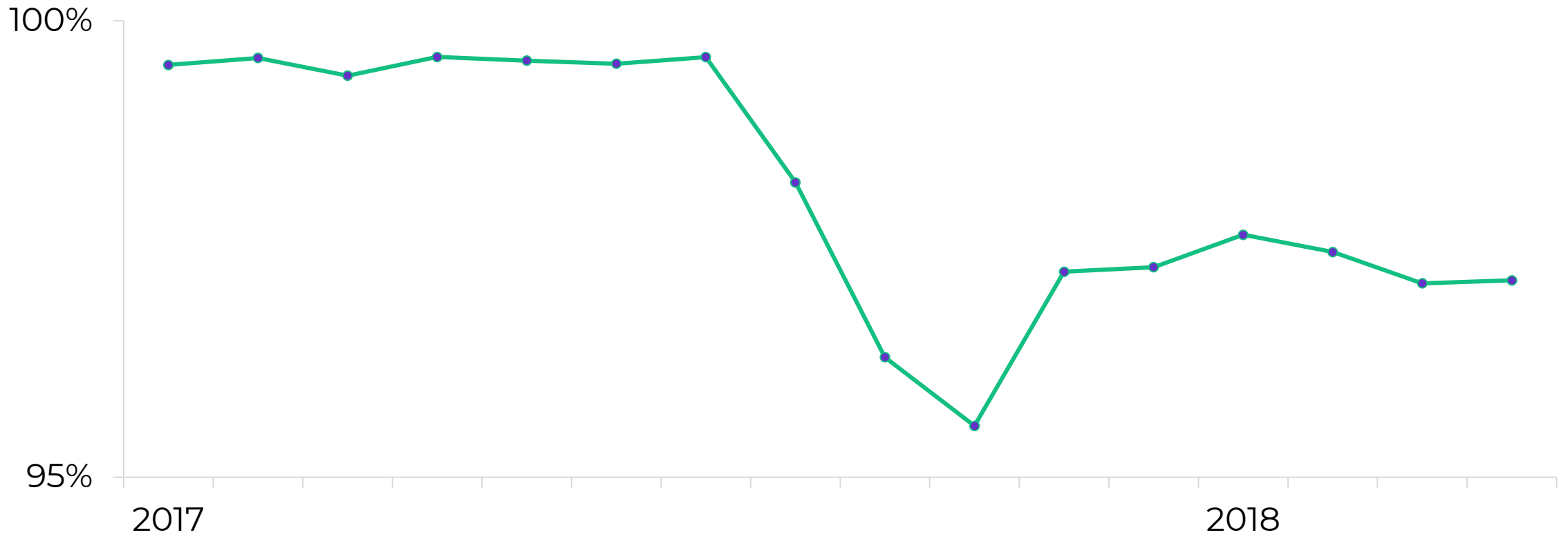
Percentage of XYZ by Month, 2017-18



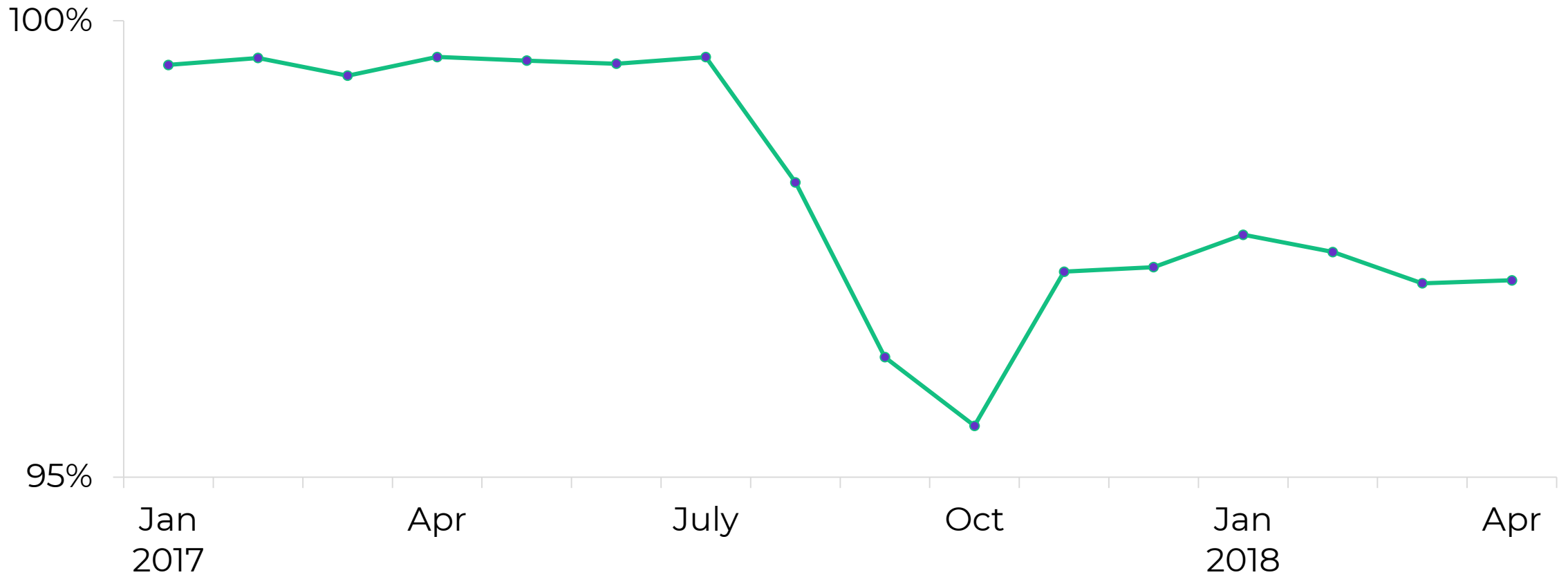
Percentage of XYZ by Month, 2017-18



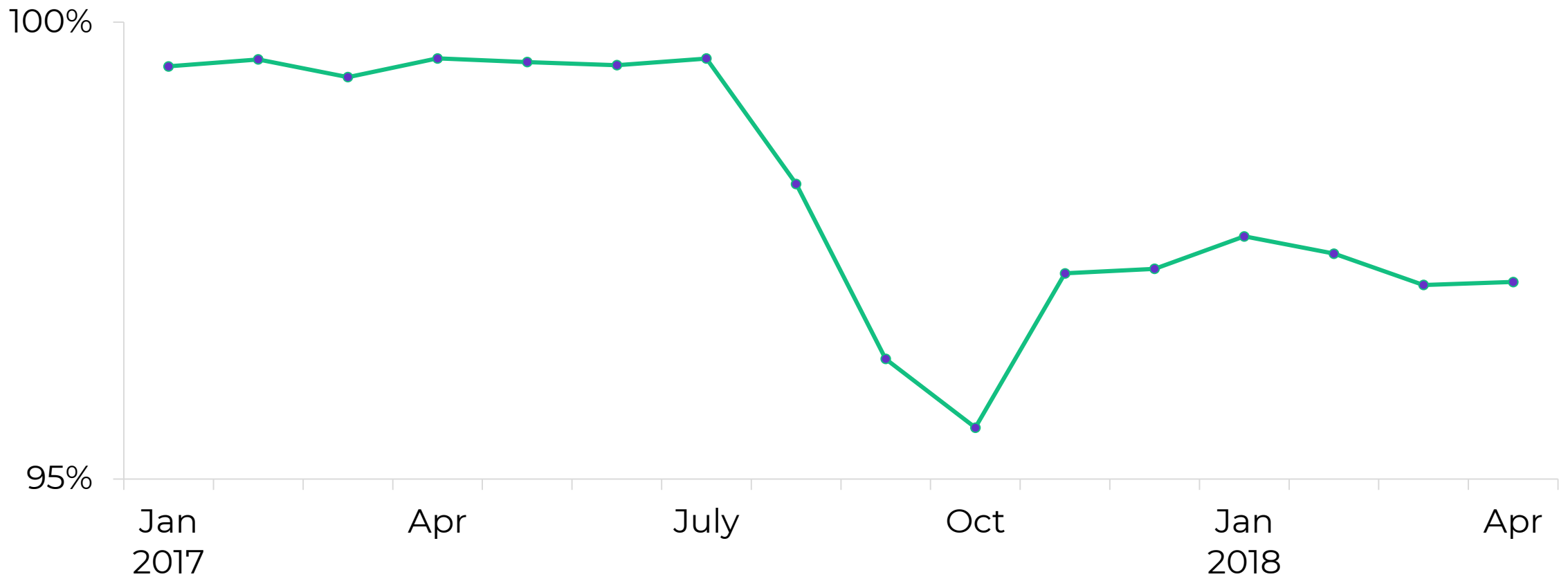
Percentage of XYZ by Month, 2017-18



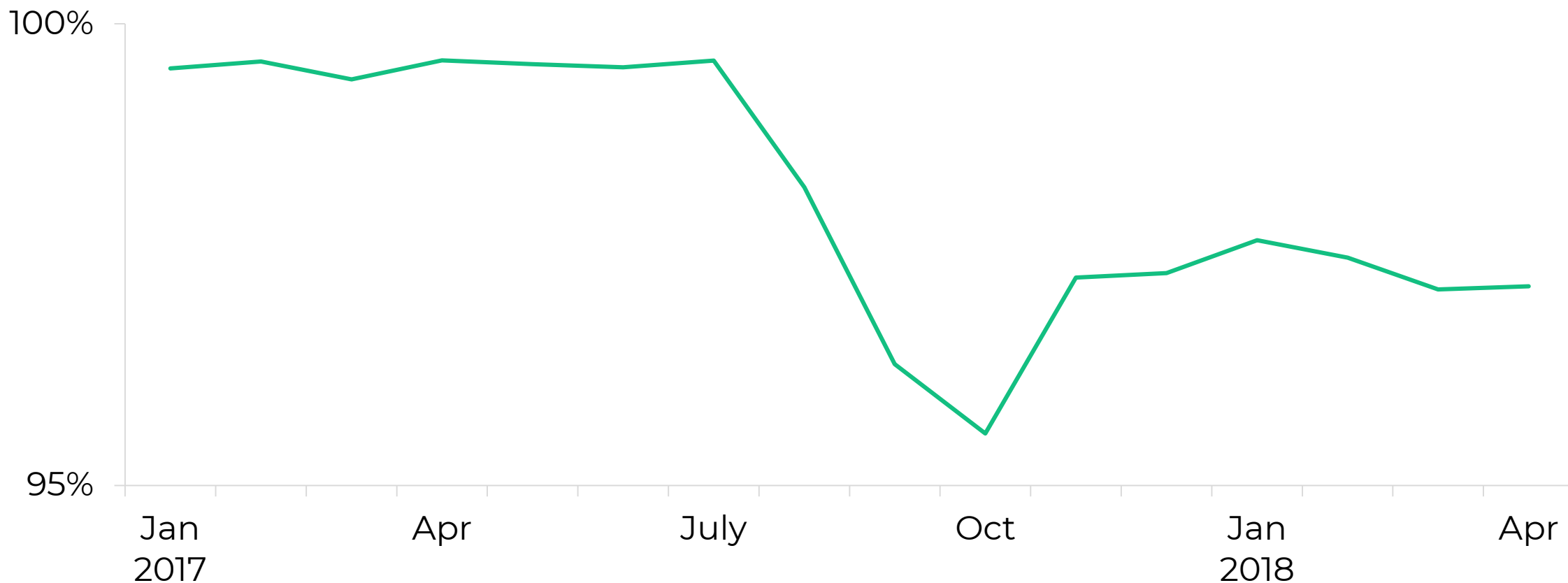
Percentage of XYZ by Month, 2017-18



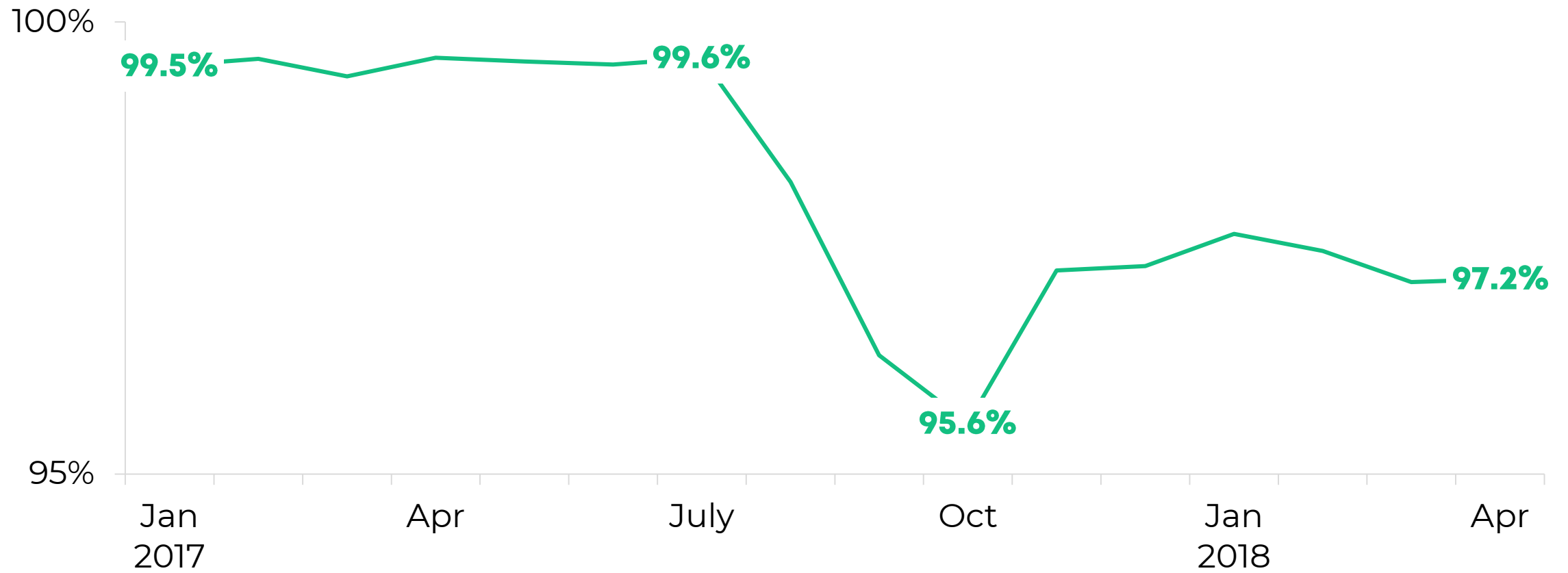
Percentage of XYZ



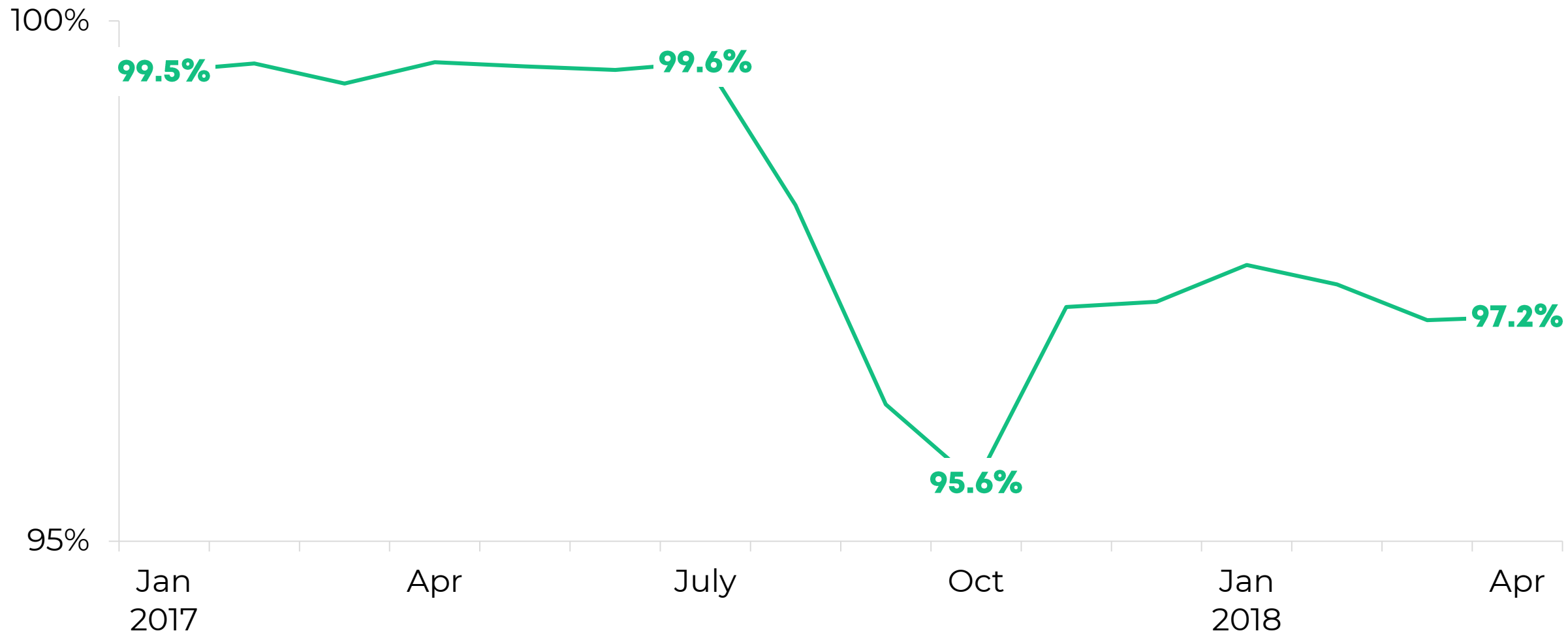
Percentage of XYZ



Percentage of XYZ



Percentage of XYZ

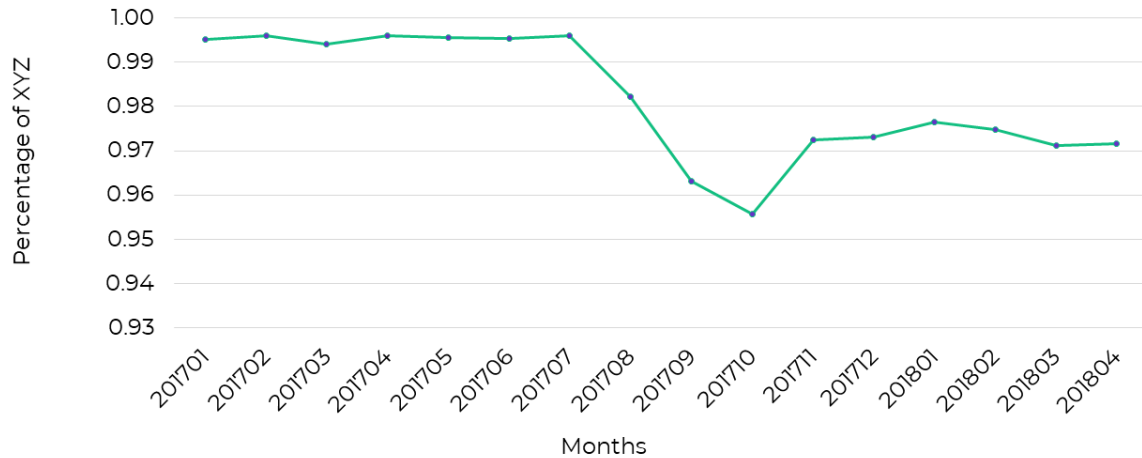


Remove Unnecessary Ink



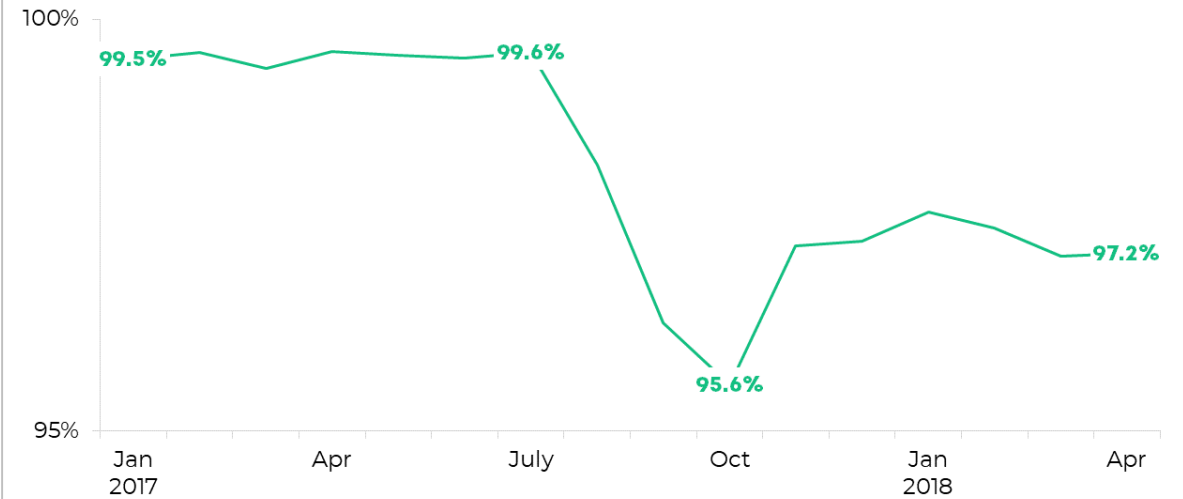
Percentage of XYZ by Month, 2017-18

Percent of XYZ by Month, 2017-18



depict data studio

Percentage of XYZ



depict data studio



Analyze
Your
Audience



Choose
the Right
Chart



Select a
Software
Program



Declutter



**Clarify
with Color**



Clarify
with Text

Brand Visuals with Custom Colors

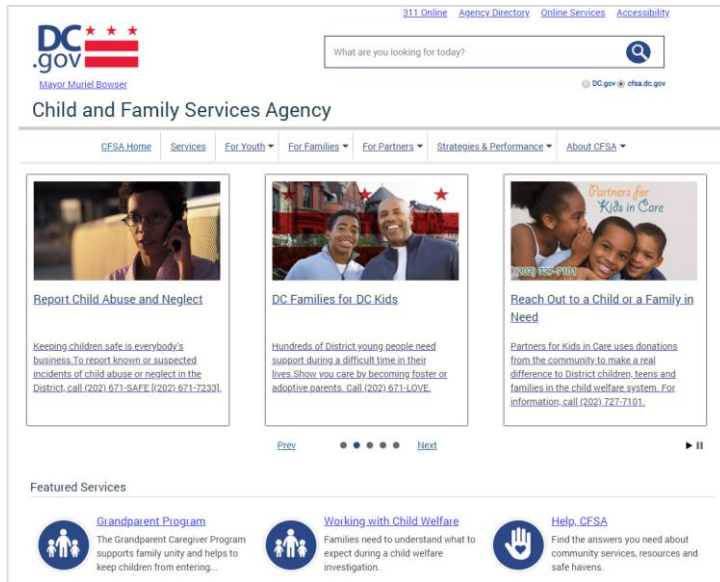
Check Out Your Style Guide, Logo, and/or Website



Figure Out Your Color Codes

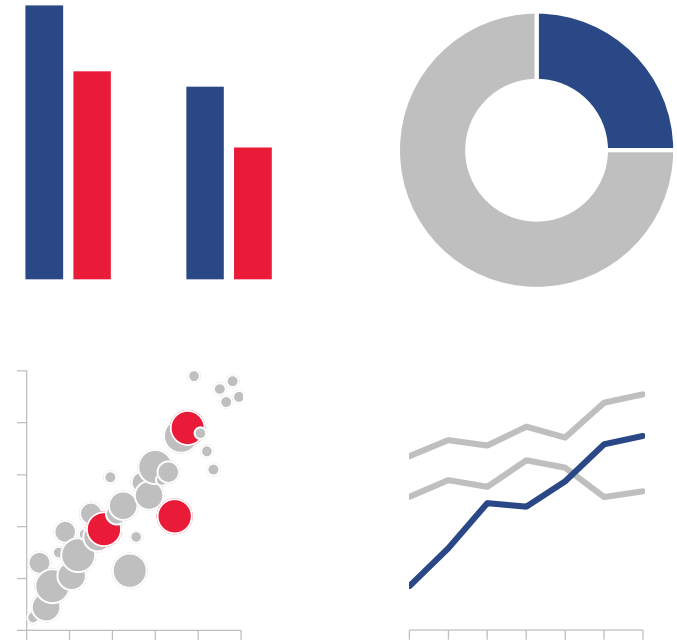


Use Those Colors in Your Visuals



Blue
RGB 42, 72, 134
Hex 86482A

Red
RGB 234, 27, 57
Hex 391BEA



Find Color Codes in Style Guides



PMS **426 C**
RGB **38, 38, 38**

CMYK **71, 65, 64, 69**
HEX # **262626**



PMS **266 C**
RGB **100, 50, 198**

CMYK **74, 83, 0, 0**
HEX # **6432C6**



PMS **660 C**
RGB **63, 122, 216**

CMYK **75, 51, 0, 0**
HEX # **3F7AD8**



PMS **253 C**
RGB **183, 21, 183**

CMYK **40, 91, 0, 0**
HEX # **B715B7**



PMS **3395 C**
RGB **19, 191, 129**

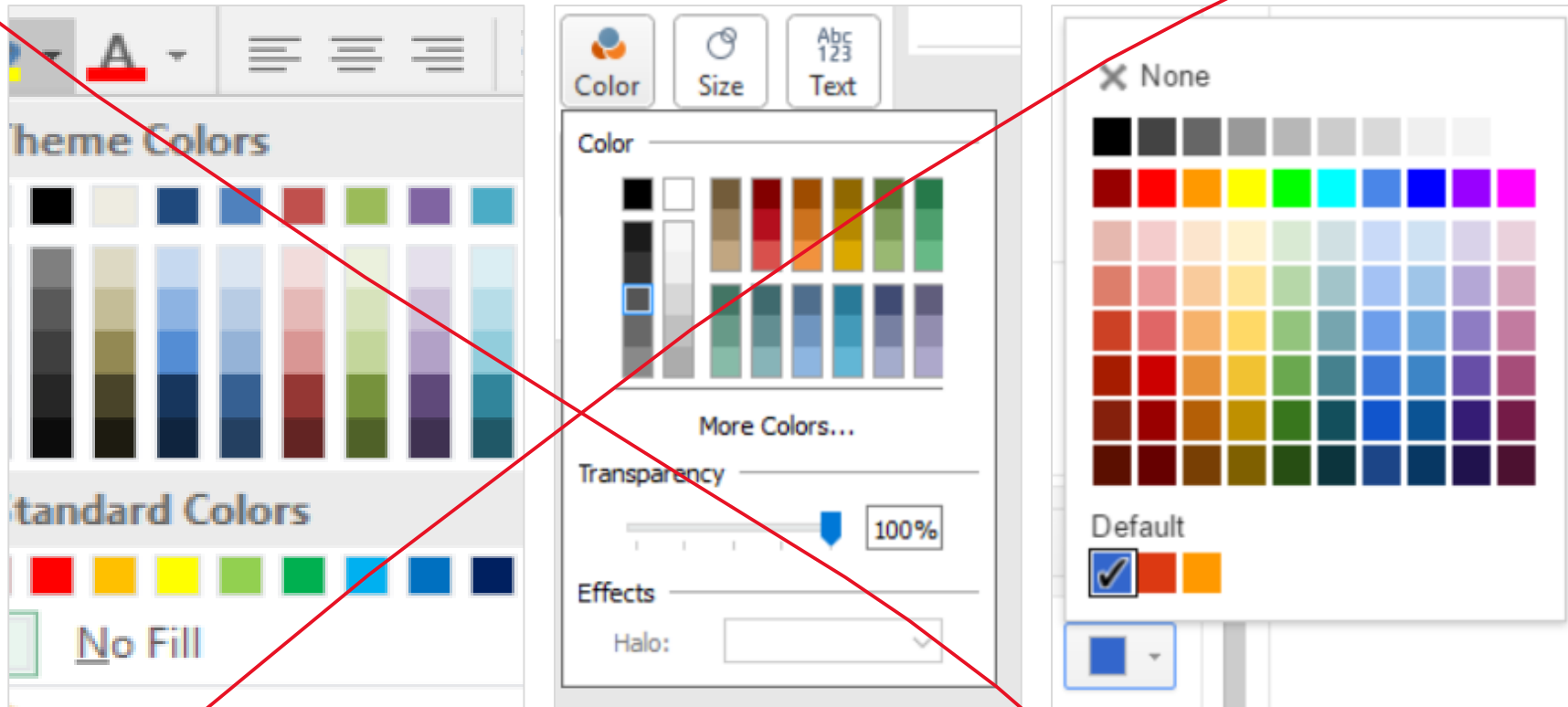
CMYK **73, 0, 68, 0**
HEX # **13BF81**



PMS **141 C**
RGB **247, 203, 82**

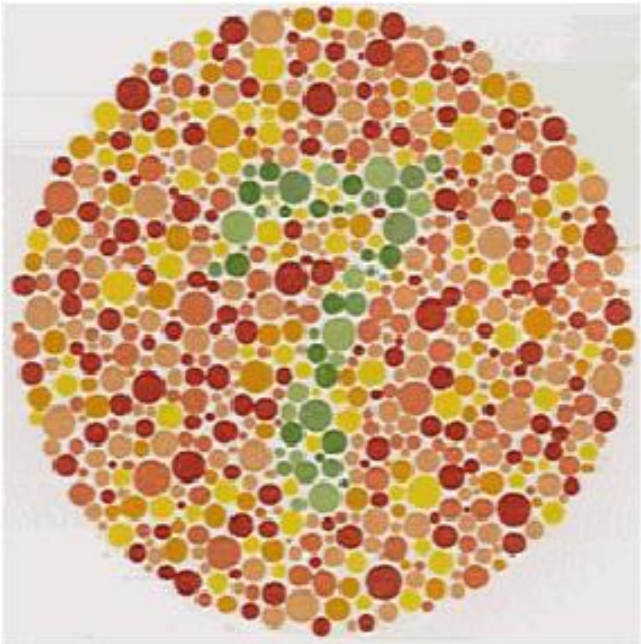
CMYK **3, 19, 79, 0**
HEX # **F7CB52**

Brand Visuals with Custom Colors

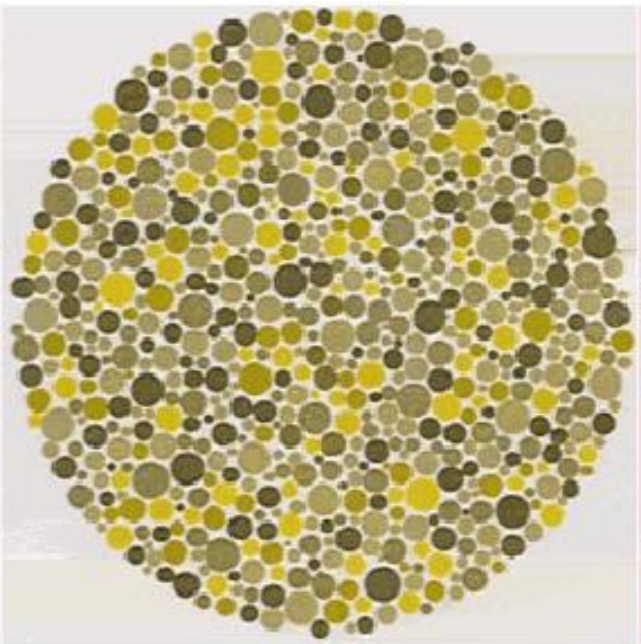


Ensure Legibility for Color Vision Deficiencies

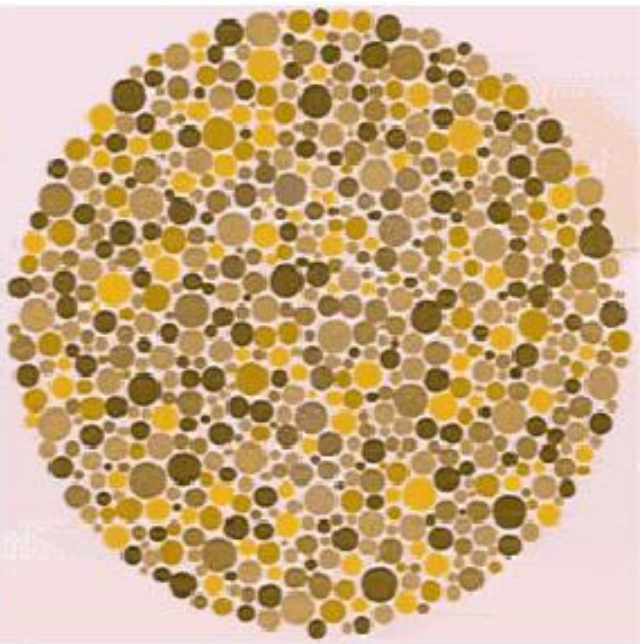
Normal



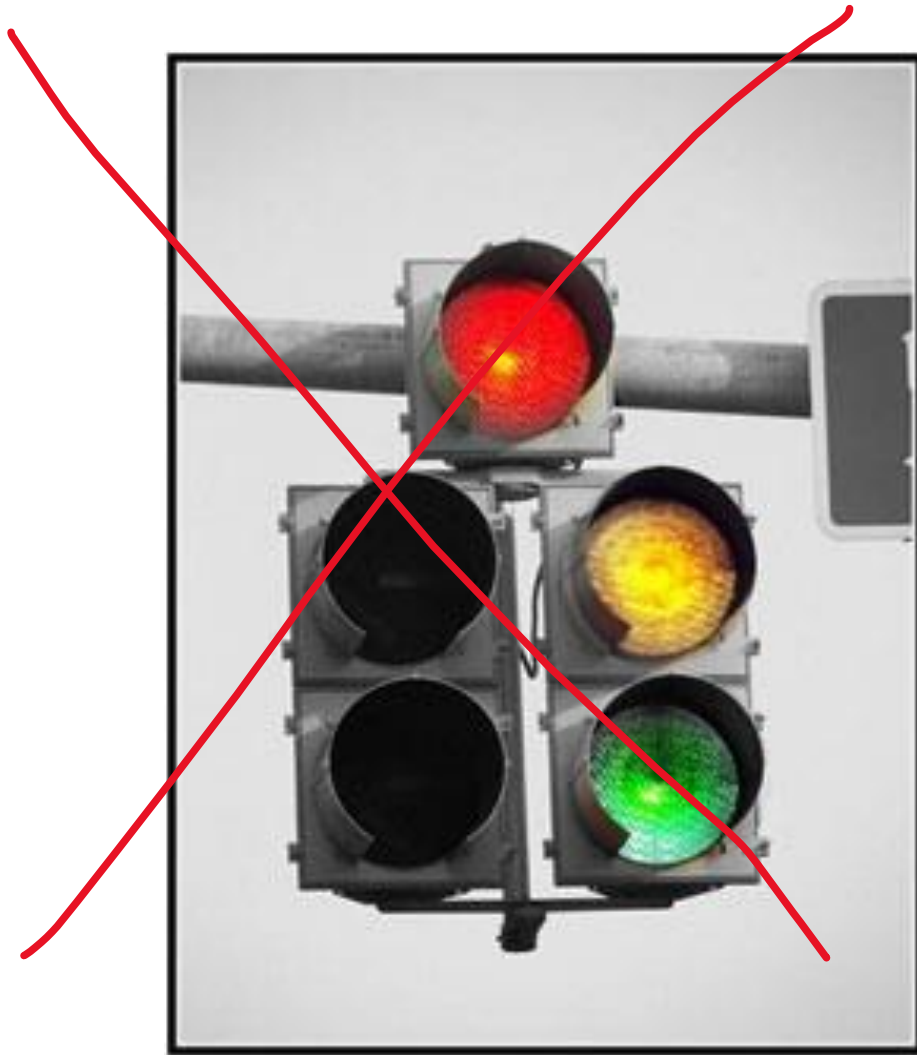
Protanope



Deuteranope



Ensure Legibility for Color Vision Deficiencies

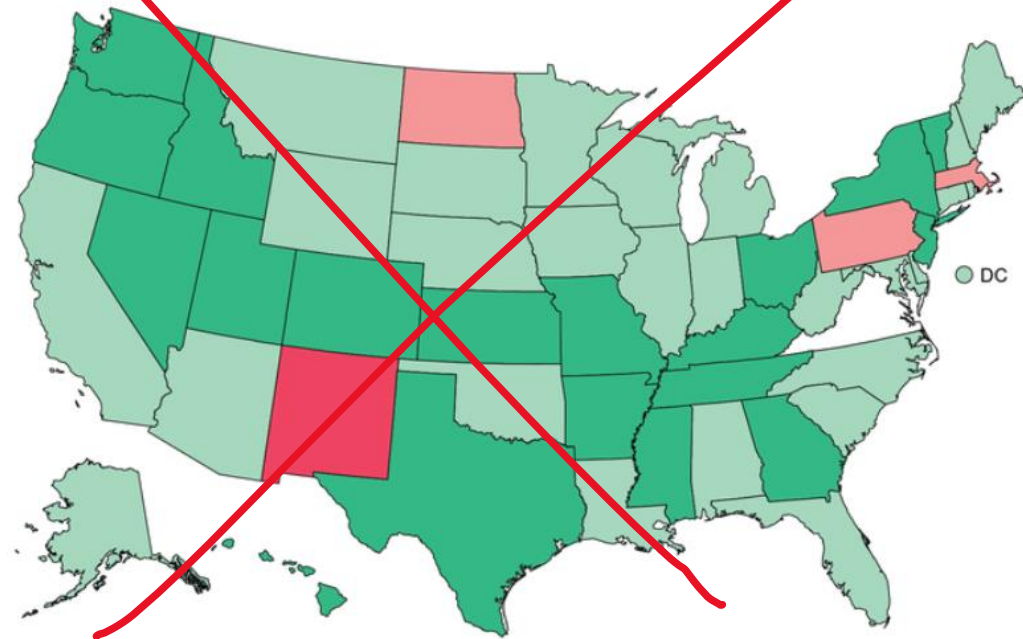
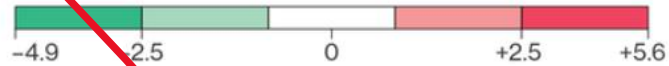


Ensure Legibility for Color Vision Deficiencies



Hunger Falls in Most of U.S.

Food insecurity change in percentage points from 2012-2014 to 2015-2017



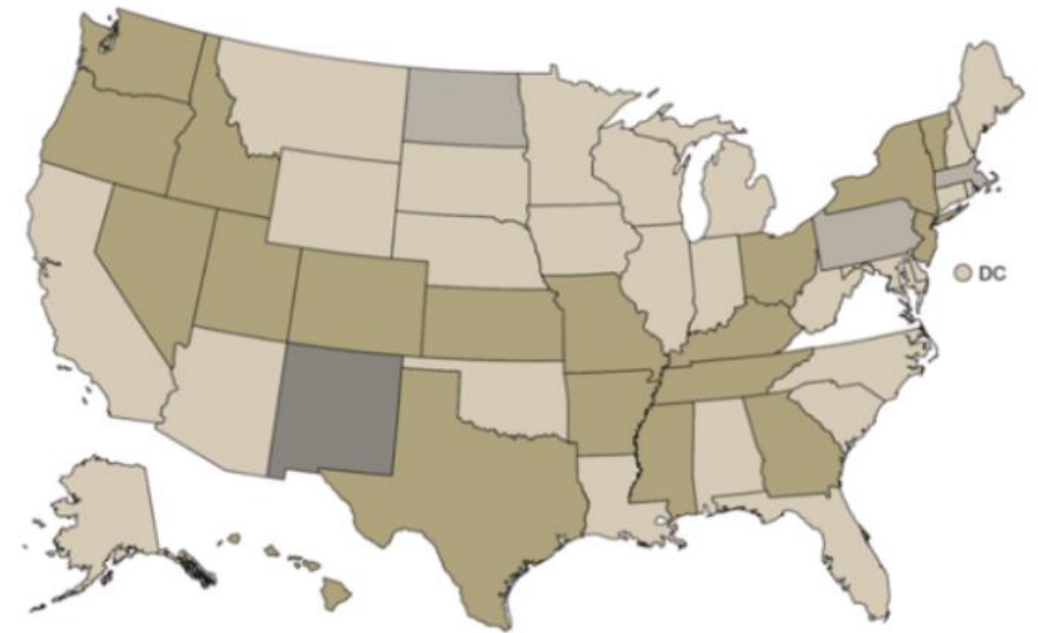
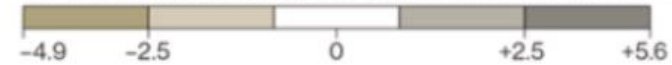
Note: Food insecurity means household lacked money or other resources for obtaining food during year.

Source: U.S. Department of Agriculture

Bloomberg

Hunger Falls in Most of U.S.

Food insecurity change in percentage points from 2012-2014 to 2015-2017



Note: Food insecurity means household lacked money or other resources for obtaining food during year.

Source: U.S. Department of Agriculture

Bloomberg

<https://www.bloomberg.com/news/articles/2018-09-05/u-s-hunger-falls-to-lowest-in-decade-as-unemployment-declines>

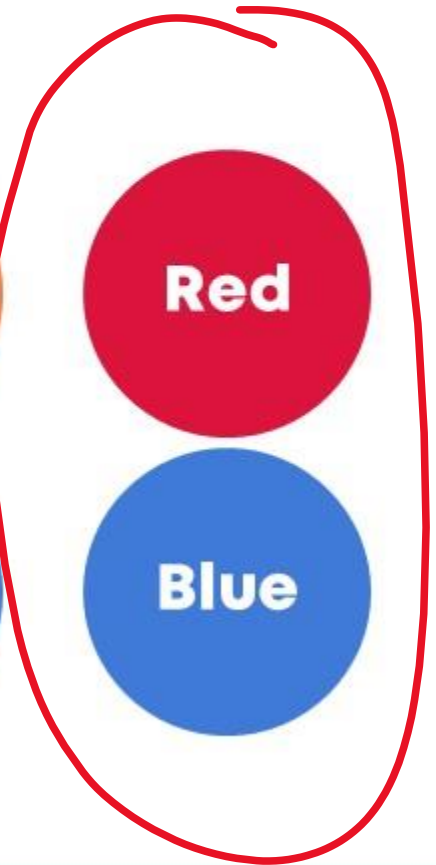
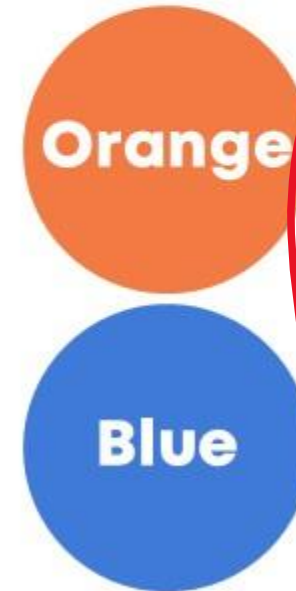
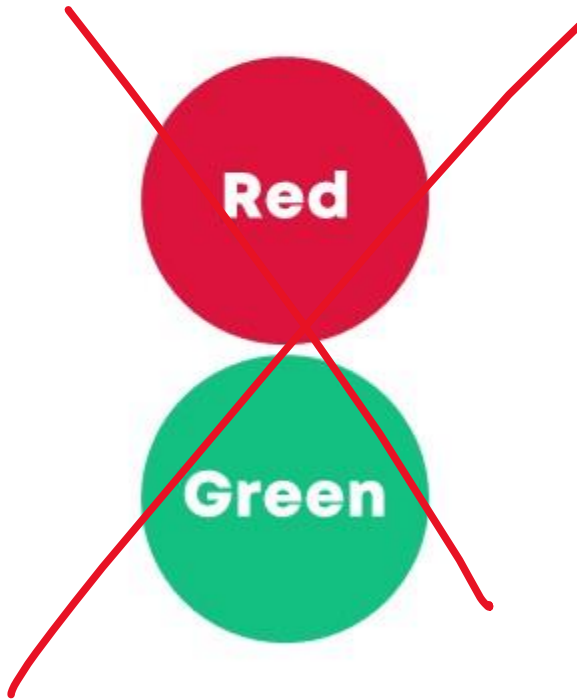
<https://www.color-blindness.com/coblis-color-blindness-simulator/>

Ensure Legibility for Color Vision Deficiencies

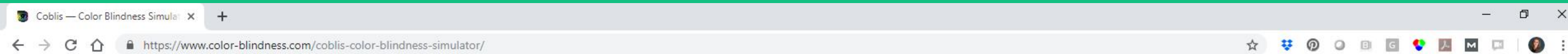
No Way!

Safer Bets

Bad
↑
↓
Good



Ensure Legibility for Color Vision Deficiencies



Home ▾ CVD Essentials ▾ Color Blindness Tests ▾ **Color Tools ▾** Contact

Coblis — Color Blindness Simulator

If you are not suffering from a color vision deficiency it is very hard to imagine how it looks like to be colorblind. The **Color BL**indness **S**imulator can close this gap for you. Just play around with it and get a feeling of how it is to have a color vision handicap.

As all the calculations are made on your local machine, no images are uploaded to the server. Therefore you can use images as big as you like, there are no restrictions. Be aware, there are some issues for the "Lens feature" on Edge and Internet Explorer. All others should support everything just fine.

So go ahead, choose an image through the upload functionality or just drag and drop your image in the center of our **Color BL**indness **S**imulator. It is also possible to zoom and move your images around using your mouse – try it out, I hope you like it.

Drag and drop or paste your file in the area below or: Ensure-Legib...iciencies.jpg

Trichromatic view:	Anomalous Trichromacy:	Dichromatic view:	Monochromatic view:
<input checked="" type="radio"/> Normal	<input type="radio"/> Red-Weak/Protanomaly	<input type="radio"/> Red-Blind/Protanopia	<input type="radio"/> Monochromacy/Achromatopsia
	<input type="radio"/> Green-Weak/Deuteranomaly	<input type="radio"/> Green-Blind/Deuteranopia	<input type="radio"/> Blue Cone Monochromacy
	<input type="radio"/> Blue-Weak/Tritanomaly	<input type="radio"/> Blue-Blind/Tritanopia	

Use lens to compare with normal view: No Lens Normal Lens Inverse Lens

[Reset View](#)



SPONSORED SEARCHES

FREE Color Blind Check

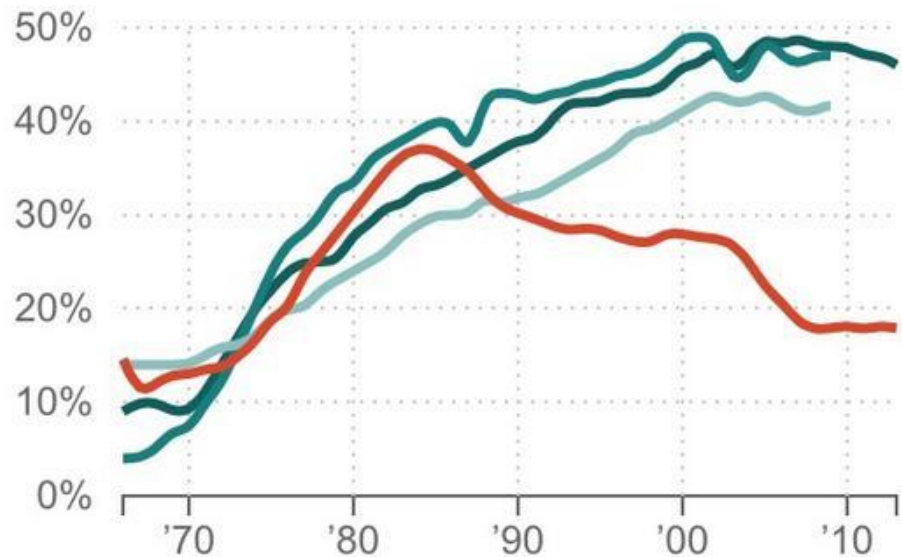
New kind of color blindness test!
Try **Color Blind Check** and test type and severity of your color vision deficiency. Easy and fun!
Info at www.colorblindcheck.com



Remove Legends and Label Directly

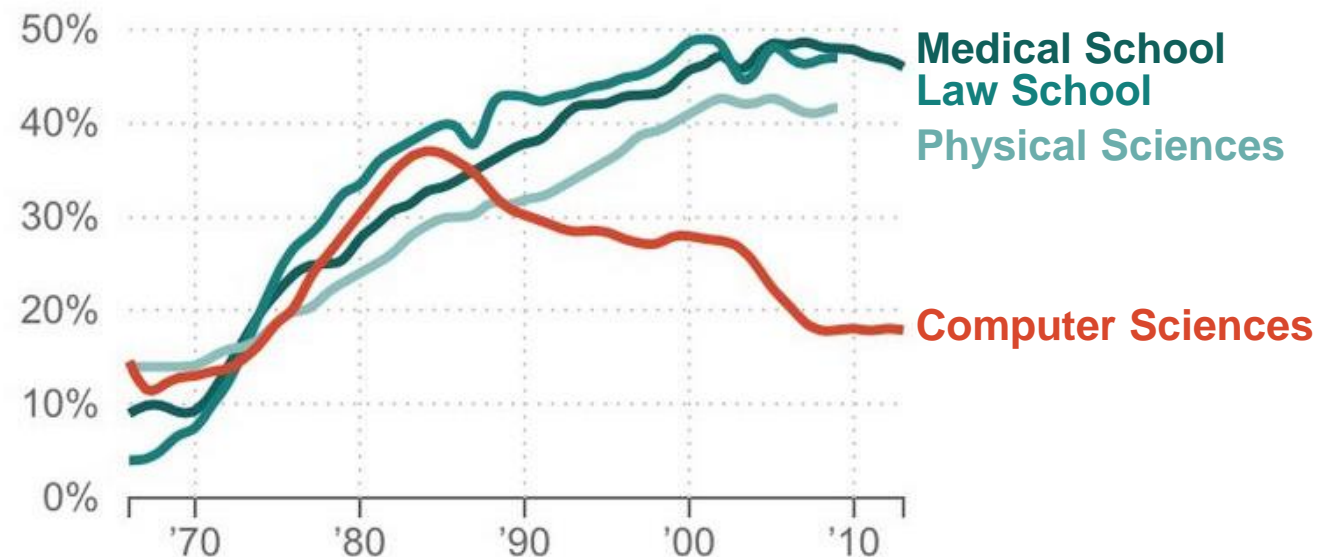
What Happened To Women In Computer Science?

% Of Women Majors, By Field

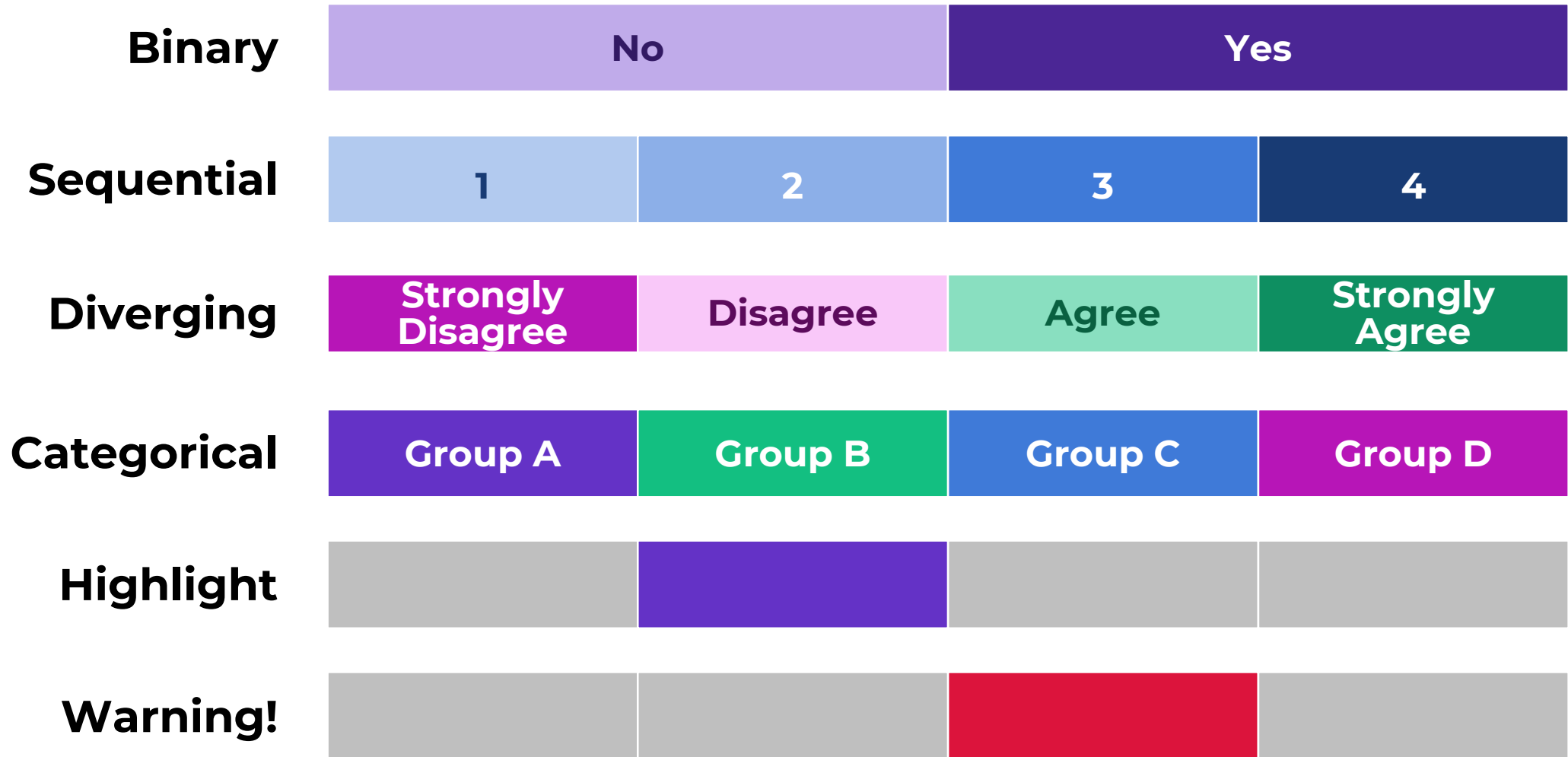


What Happened To Women In Computer Science?

% Of Women Majors, By Field



Use Your Branding Colors in Your Visuals



Use Your Branding Colors in Your Visuals

Binary



Sequential



Diverging



Categorical



Highlight

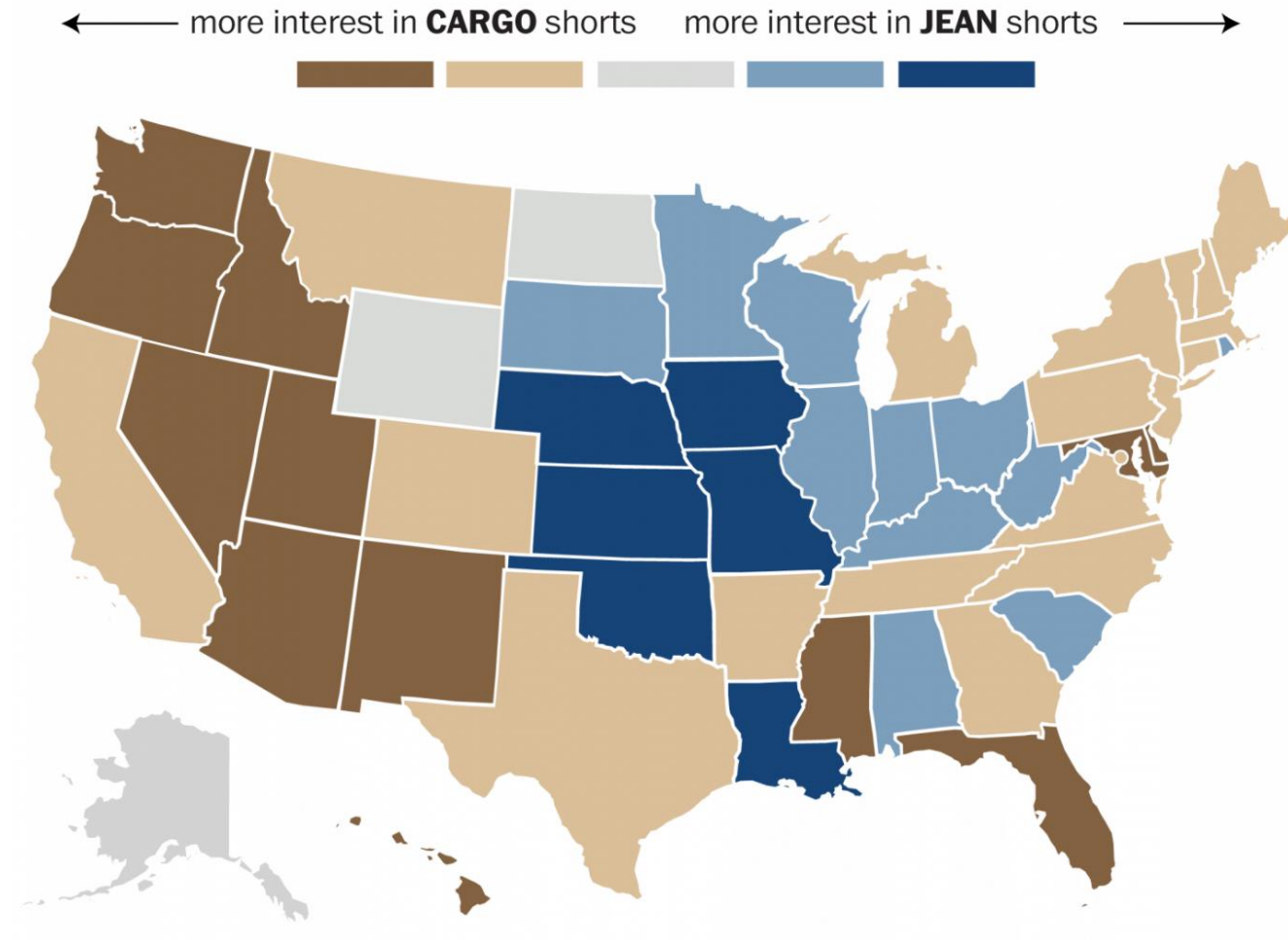


Warning!



Diverging

The great shorts divide



WAP0.ST/WONKBLOG

Source: Google Trends

Washington Post, <https://www.washingtonpost.com/news/wonk/wp/2016/08/05/map-real-americans-wear-jorts/>

Use Your Branding Colors in Your Visuals

Binary



Sequential



Diverging



Categorical



Highlight



Warning!




Categorical by Chapter

Chapter 1. Demographic and Social Characteristics

Population Characteristics

Population characteristics can help describe communities and provide a context for trends in health outcomes. The 2012-2016 American Community Survey (ACS; United States Census Bureau) estimated Hamilton County's population at 351,305, an increase of 4.4% since the 2010 Census, when the population was 336,463. The table below highlights demographic data from the 2012-2016 ACS, with comparisons to the state and nation.



	Hamilton County	Tennessee	United States
Population	351,305	6,548,009	318,558,162
Population under 18 years	21%	23%	23%
Population 65 years and older	16%	16%	16%
Median Age	39.3	38.1	37.7
Language other than English at home	6%	10%	10%

Race	Percentage
White	75%
African American/Black	20%
Asian	2%
Some other race	1%
Two or more races	2%

Ethnicity	Percentage
Hispanic/Latino	5%

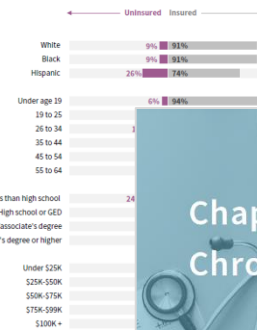
Educational Attainment, age 25+	Percentage
Less than high school graduate	12%
High school graduate or GED	27%
Some college no degree	23%
Associate's degree	8%
Bachelor's degree or higher	30%

Sources: 2012-2016 American Community Survey 5-year

Picture of Our Health 2019

Chapter 3. Access to Health Care and Health Care Coverage

People without Health Insurance in Hamilton County
According to the 2017 American Community Survey, an estimated 32,303 Hamilton County residents (9% of the population) did not have health insurance. The uninsured rate varies by ethnicity, age, educational attainment, and income. This graph displays the proportion of people who were uninsured and insured across various racial, ethnic, age, educational, and income groups. For example, nine percent of White residents in Hamilton County were uninsured while 91 percent are insured.

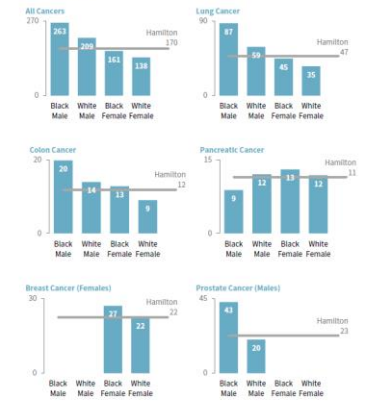


Source: 2017 American Community Survey 1-year estimate

Picture of Our Health 2019

Chapter 6. Chronic Diseases

Hamilton County Age-Adjusted Mortality Rates (per 100,000 population) for Cancer by Type and by Race/Sex, 2013-2015

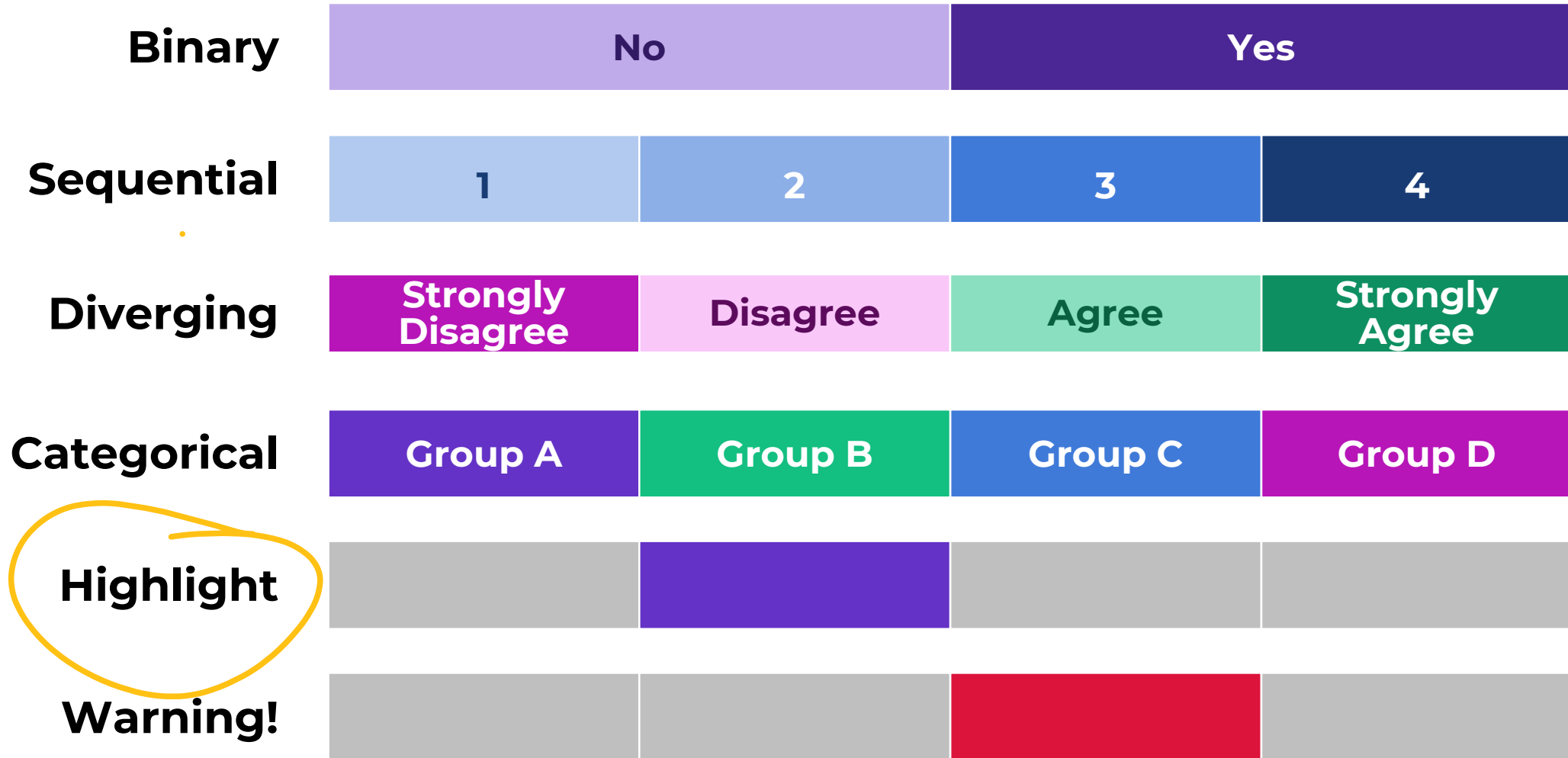


Source: Tennessee Department of Health

Picture of Our Health 2019

62

Use Your Branding Colors in Your Visuals



Highlight to Draw Attention

Views in:	Most Hardworking	Most Trustworthy	Least Hardworking	Least Trustworthy
Britain	Germany	Germany	Greece	France
France	Germany	Germany	Italy	Greece
Germany	Germany	Germany	Greece	Greece/Italy
Italy	Germany	Germany	Romania	Italy
Spain	Germany	Germany	Greece	Italy
Greece	Greece	Greece	Italy	Germany
Poland	Germany	Germany	Greece	Germany
Czech Rep.	Germany	Germany	Greece	Greece

Use Your Branding Colors in Your Visuals

Binary



Sequential



Diverging



Categorical



Highlight

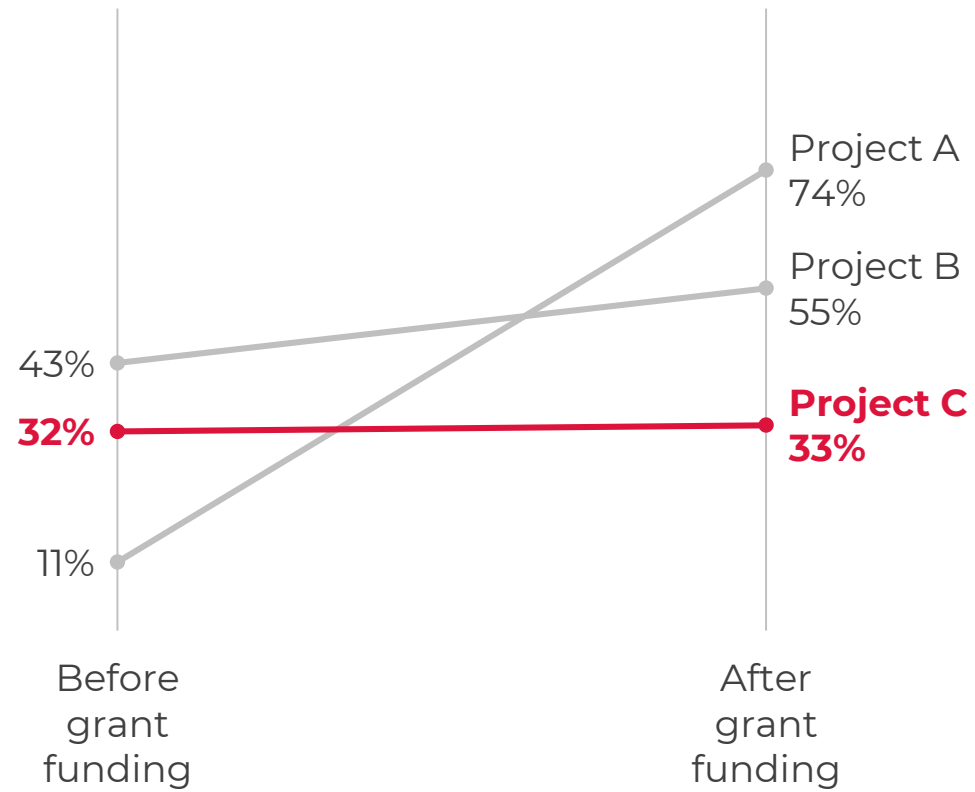


Warning!



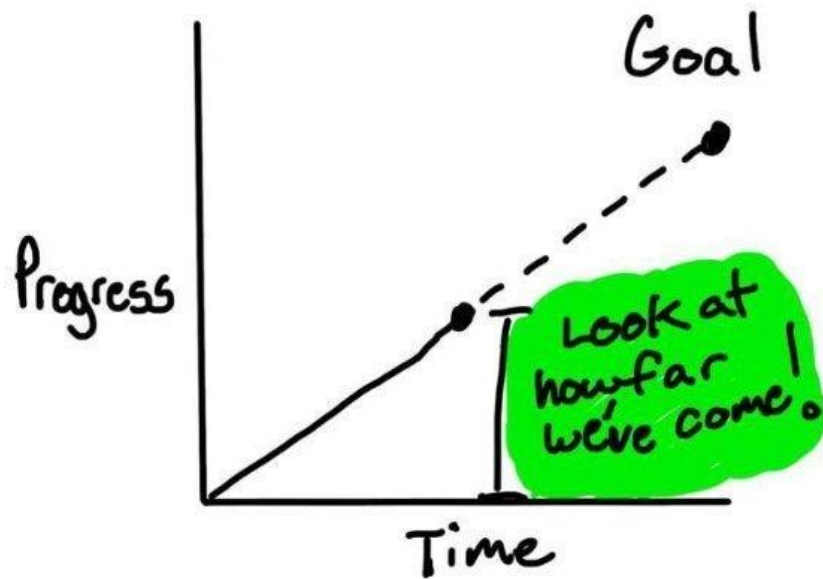
Warning!

Project C Remained the Same After the Four-Year Grant Funding

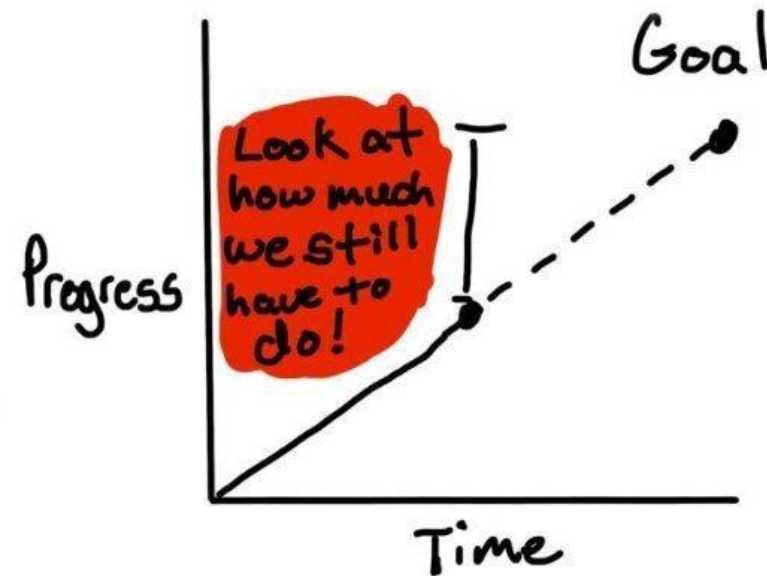


Which Tone?

The Optimist Chart



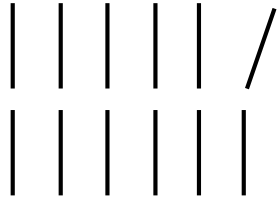
The Pessimist Chart



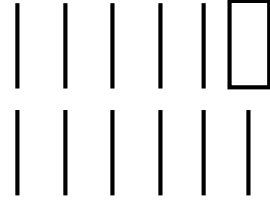
fresh spectrum

Preattentive Attributes

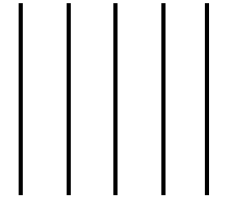
Orientation



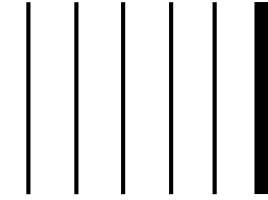
Shape



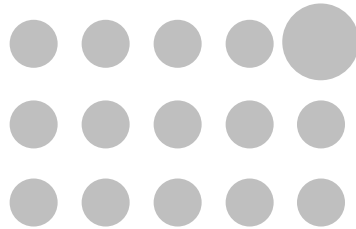
Length



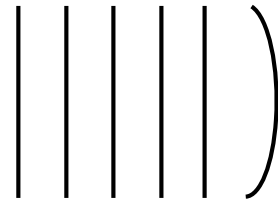
Width



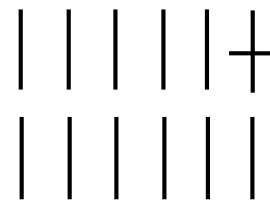
Size



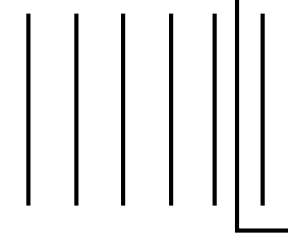
Curvature



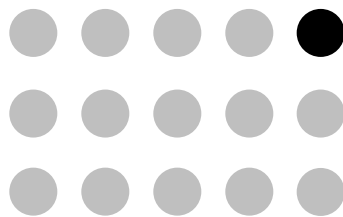
Added marks



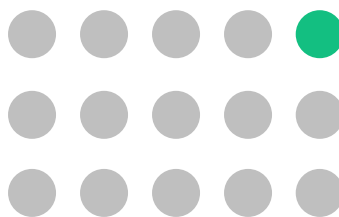
Enclosure



Intensity



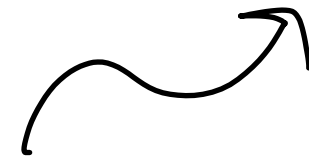
Hue



Spatial position



Motion



Preattentive Attributes

State laws promoting social, emotional, and academic development leave room for improvement

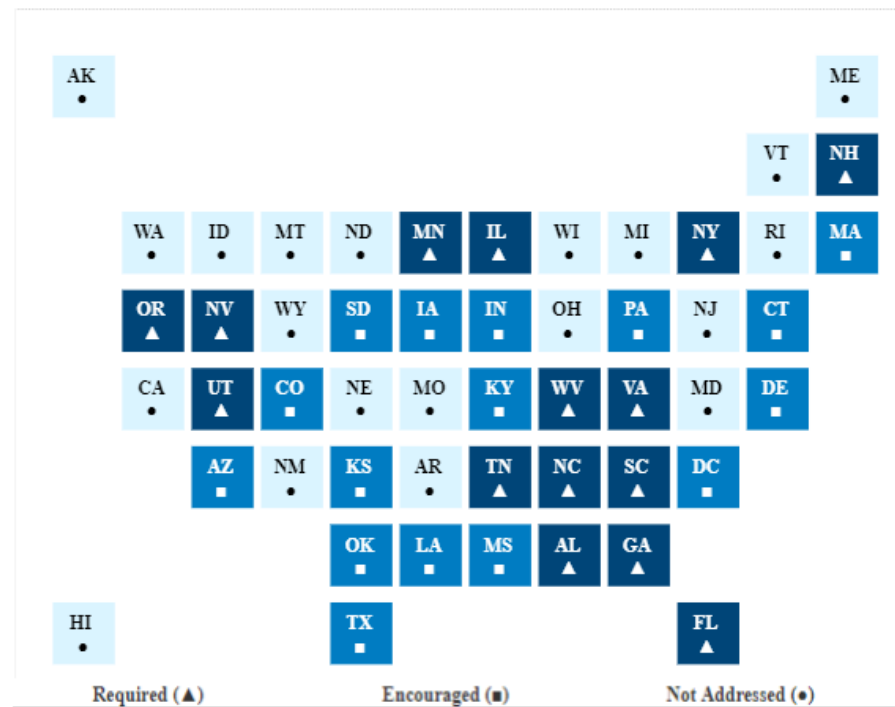
National landscape of social emotional learning and school health policies

This map shows the extent to which states have used policy to promote social-emotional learning in their health education standards. Use the tabs below to navigate between topics related to social-emotional learning. Hover over states to see the status of the selected topic in that state's relevant statutes and regulations.

Social Emotional Learning	SEL in Health Education	Cultural Competency	Trauma-informed Practices	Mental/ Emotional Health Curriculum
---------------------------	-------------------------	---------------------	---------------------------	-------------------------------------

Social and Emotional Learning

■ Required (▲) ■ Encouraged (■) ■ Not Addressed (●)





Analyze
Your
Audience



Choose
the Right
Chart



Select a
Software
Program



Declutter



Clarify
with Color

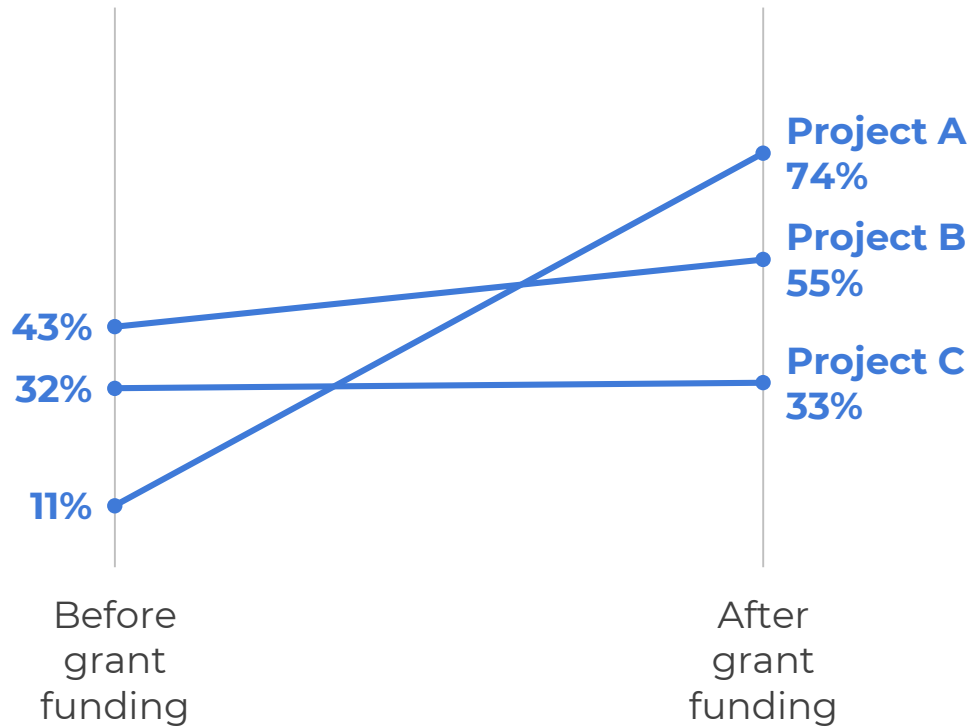


**Clarify
with Text**

Write the Takeaway Finding in the Title

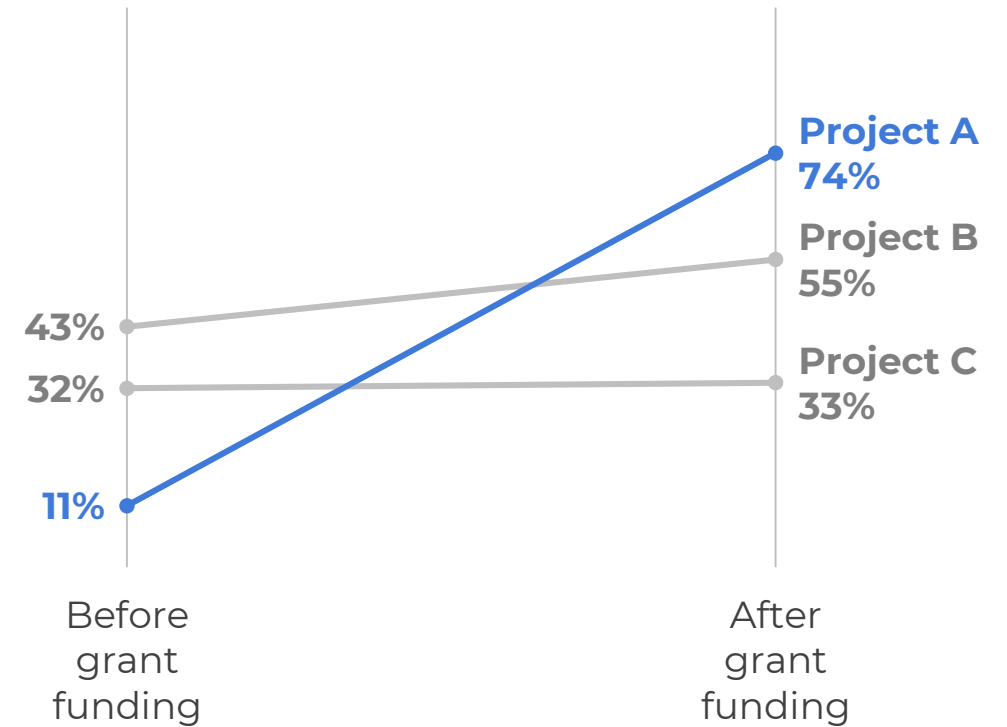
Traditional

Figure 2. Project Results Before and After the Four-Year Grant Funding



Storytelling

Project A Improved the Most
After the Four-Year Grant Funding



Write the Takeaway Finding in the Title

Real-time Communication With Health Care Providers through an Online Respiratory Pathogen Laboratory Report
 Paul A. Christensen, MD
 Department of Pathology and Genomic Medicine,
 Houston Methodist Hospital, Houston, TX

Introduction
 We implemented a real-time online report to distribute respiratory pathogen data for our eight-hospital system in Houston, TX to anyone with an internet connection and web browser.

Methods
 - Seighe influenza A+B fluorescent immunoassay and Biofire FluAryc Respiratory Panel test result data were extracted daily from our laboratory information system.
 - Four interactive charts are published to a public facing web server at flu.houstonmethodist.org

Results
 - The online report provided pathologists and clinicians an early alert to the 2018 influenza epidemic.
 - Real time data analysis guided our institutional testing and treatment strategy during the peak of infections.
 - The data enabled pharmacy to anticipate antibiotic utilization and stock accordingly.
 - The report has been accessed 5766 times in 3.3 years from desktop and mobile devices in many different US and global locations.

Discussion
 - We developed a near real-time report that presents statistics regarding respiratory pathogen testing from six clinical microbiology laboratories.
 - Facile access to accurate real-time data during an epidemic influenza season can guide the institutional response.

Real-time access to clinical microbiology laboratory test data during an epidemic influenza season can guide the institutional response.

Houston Methodist LEADING MEDICINE
flu.houstonmethodist.org

AMIA
 STUDENT MEMBER
 ACIF

<https://twitter.com/paulchstmd/status/1123629386551447552>

MAYO CLINIC

Differences in emergency department length of stay and throughput times between males and females: Preliminary results of the Sex Equity in Emergency Departments (SEED) study group

C.O. Kwan,¹ Molly M. Jeffery, Ph.D.^{1,2}, Venkatesh R. Bellamkonda, M.D.¹

¹Mayo Clinic Graduate School of Biomedical Sciences, Mayo Clinic Alix School of Medicine, and Mayo Clinic Medical Scientist Training Program, ²Department of Emergency Medicine, ³Department of Health Sciences Research, Mayo Clinic, Rochester, MN

Introduction
 - Sex and gender disparities exist in healthcare and are outlined by the Centers for Medicare and Medicaid services
 - However, current knowledge of gender disparities in emergency departments is limited to analysis of individual chief complaints or diagnoses

Purpose
 - To determine whether there are sex based differences in length of stay (LOS) and throughput for all comers to the Emergency Department

Methods
 - Retrospective study of all adults presenting to the ED (n=65,533) between 7/1/2015-7/1/2016
 - Data presented as n(%) or median (interquartile range), with all measures of time in minutes
 - Mood's median test used to compare medians

Results
 - LOS was longer for females than males (236 vs. 222 min, p<0.0001)
 - Men experienced shorter time to room, time to provider, time to disposition plan, and treatment time than women (for all comparisons p<0.0001)

Conclusion
 - Females have longer throughput times and length of stay in than males within the same emergency department. This serves to spotlight an area of potential disparity where further investigation can be done to understand reasons why.

Female patients have longer ED lengths of stay than males

Take a picture to download the full paper

Table 1. Length of stay and throughput by sex

Variable	Male	Female
n	31,428 (48%)	34,105 (52%)
Length of stay	222 (147, 317)	236 (159, 329)
Time to room	8 (2, 50)	11 (2, 69)
Time to provider	24 (11, 63)	27 (12, 79)
Time to disposition plan	141 (86, 216)	152 (95, 227)
Treatment time	187 (120, 273)	195 (127, 279)

Figure 1. Definitions

Arrive at registration	Enter treatment room	Seen by provider	Disposition plan	Departure or transfer
Length of stay				
Time to room				
Time to provider				
Time to disposition plan				
Treatment time				

Future directions
 - Sex-specific differential diagnoses, testing, and treatments may account for some of the differences observed
 - Future analysis should take into account the influence of sex-specific tests on differences in time
 - The differences in time to room and time to provider are more difficult to explain
 - Multivariate analysis adjusting for age, race, chief complain, BMI, and insurance status should be explored for the potential role in disparities observed

Support
 This research is made possible by Mayo Clinic Department of Emergency Medicine Rochester, MN and the Mayo Foundation.
 Catherine was supported in part by the National Institute of General Medical Sciences (T32 GM 65841) and Clinical and Translational Science (UL1TR002377) and thanks the Mayo Clinic MSTP for fostering an outstanding environment for physician-scientist training

@cgknier
 @mollyjeffery
 @venkbellamkonda

<https://twitter.com/elliotthaut/status/1114558290191691777>

Make Sure Text is Horizontal

**Horizontal
text**


**Diagonal
text**

Vertical text

Make Sure Text is Horizontal

**Horizontal
text**

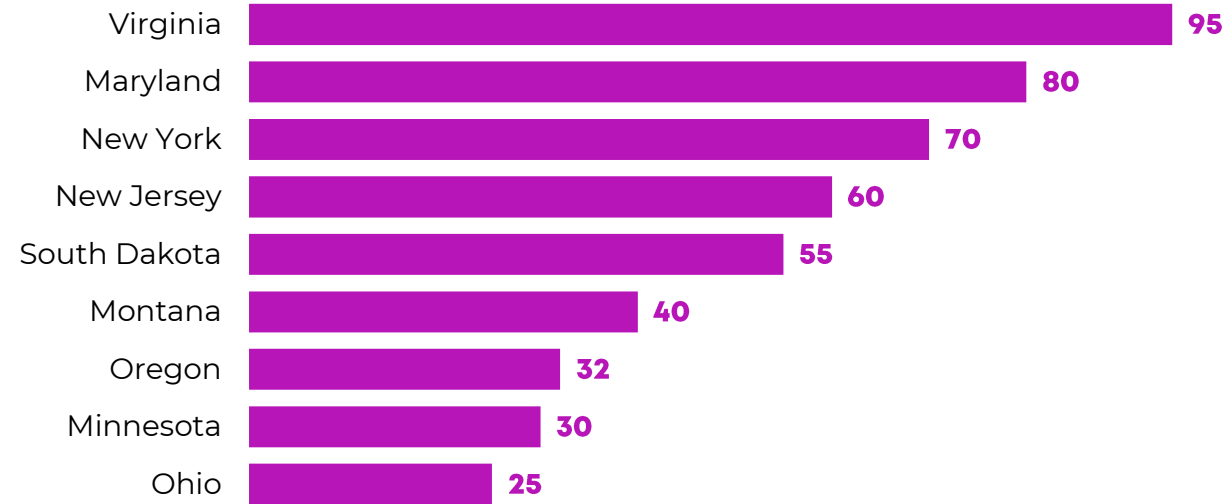
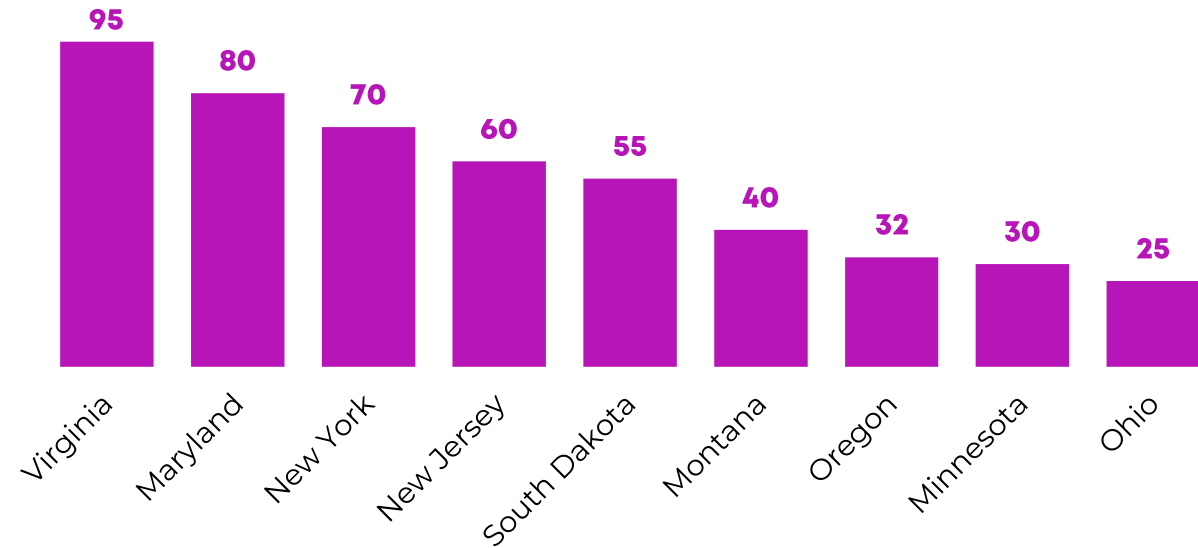
**Diagonal
text**

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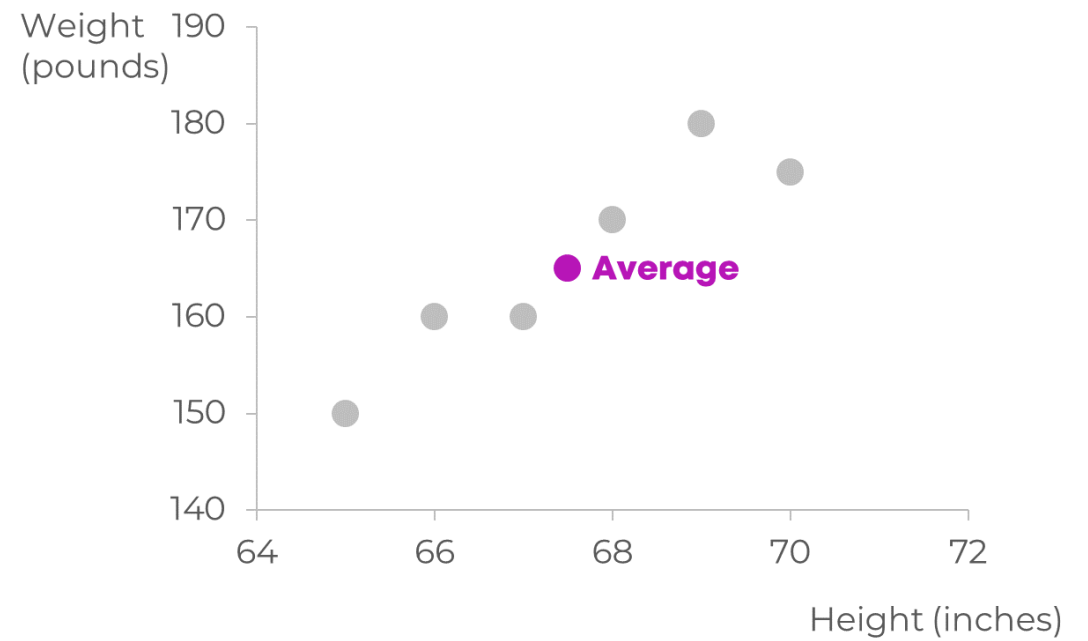
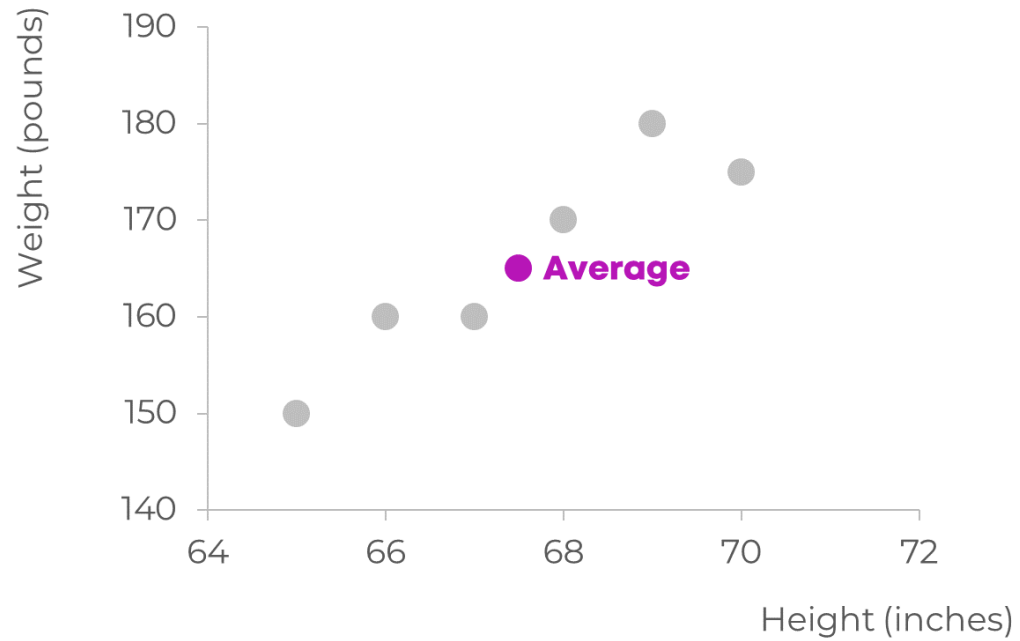
Vertical text

The text "Vertical text" is written in a bold black font and is oriented vertically. A large red 'X' is drawn over the text, indicating that this style is discouraged.

Make Sure Text is Horizontal



Make Sure Text is Horizontal



Use ALL CAPS Sparingly

**Title
Case**

**Sentence
case**

**ALL
CAPS**

Use ALL CAPS Sparingly

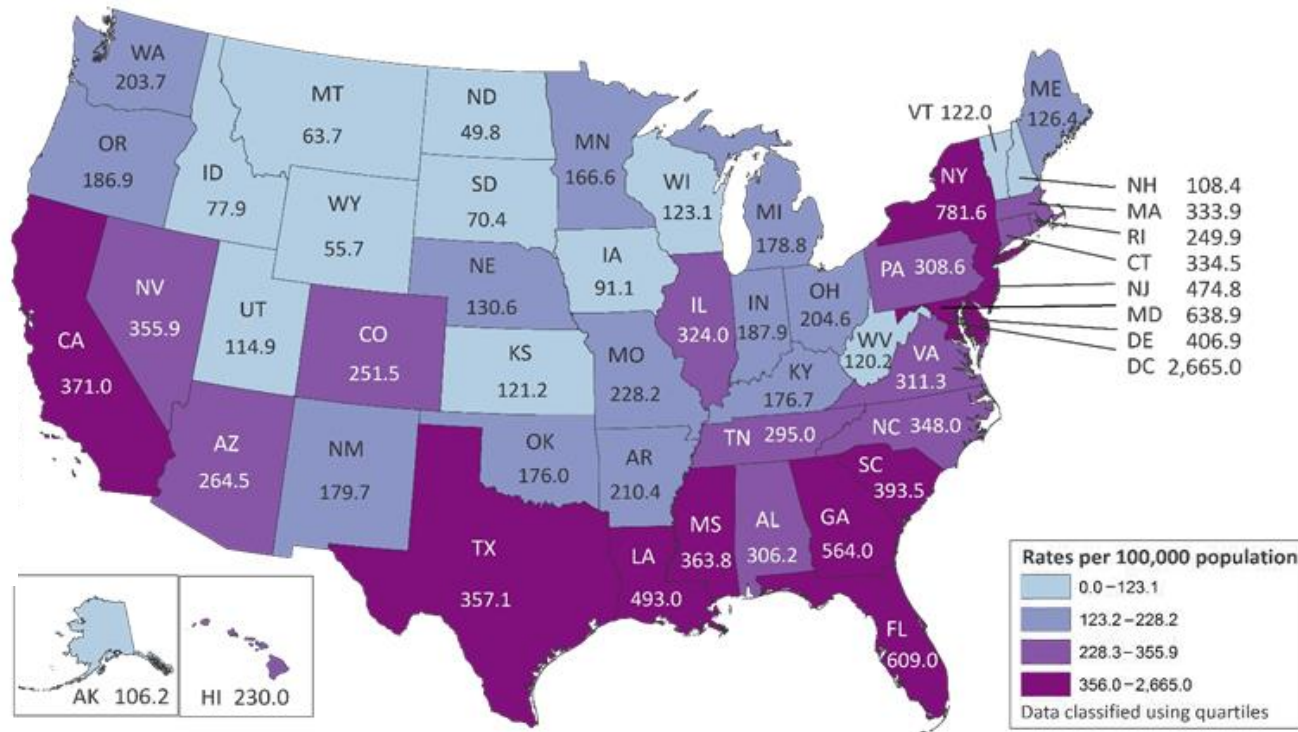
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Rates of Adults and Adolescents Living with Diagnosed HIV Infection Year-end 2014

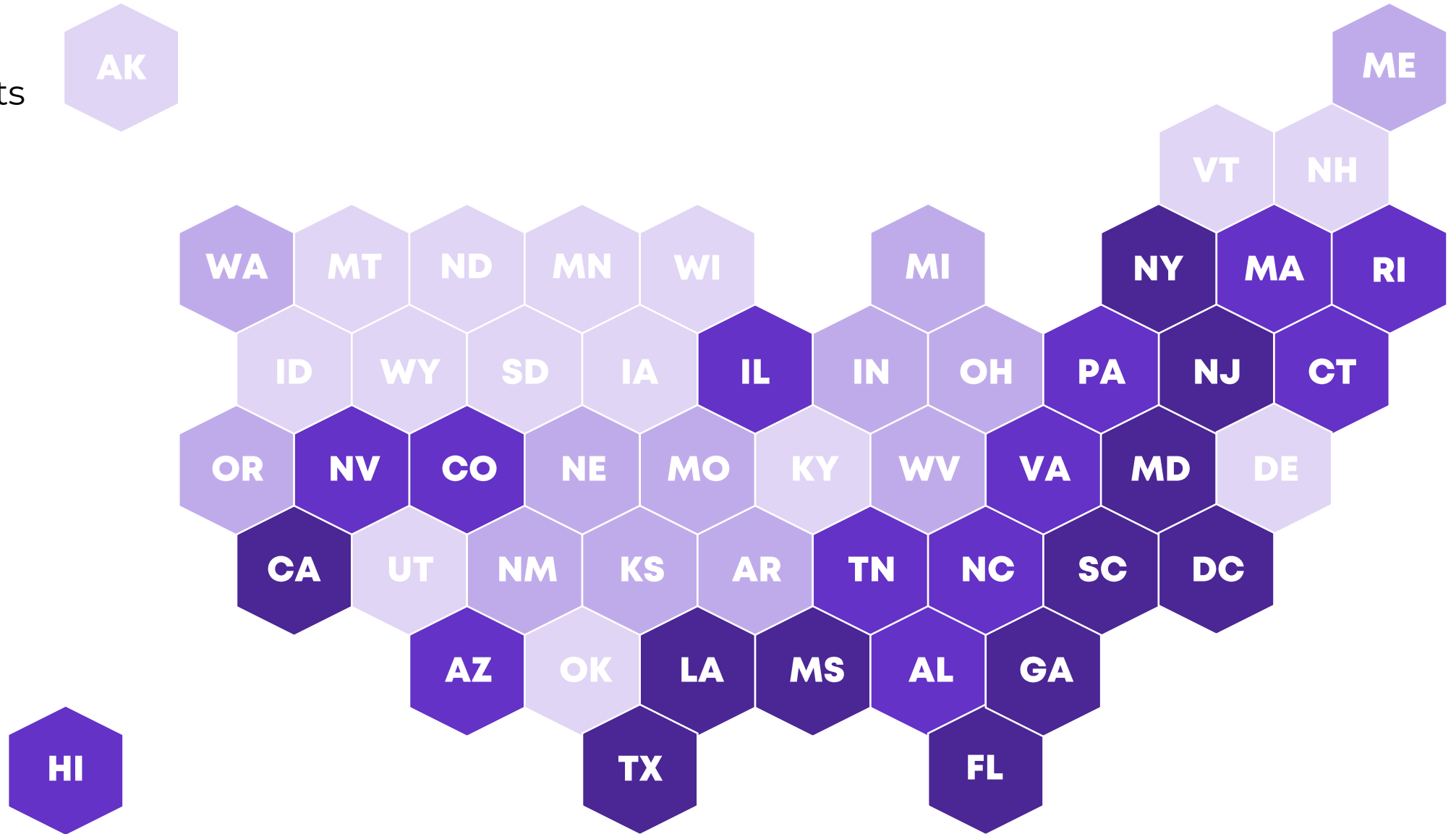
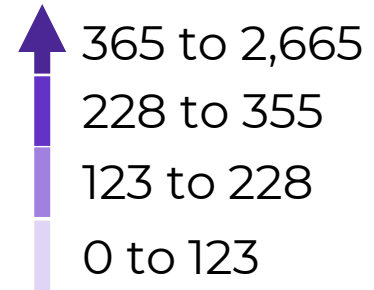
N = 970,319 Total Rate = 360.0



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data are based on address of residence as of December 31, 2014 (i.e., most recent known address).

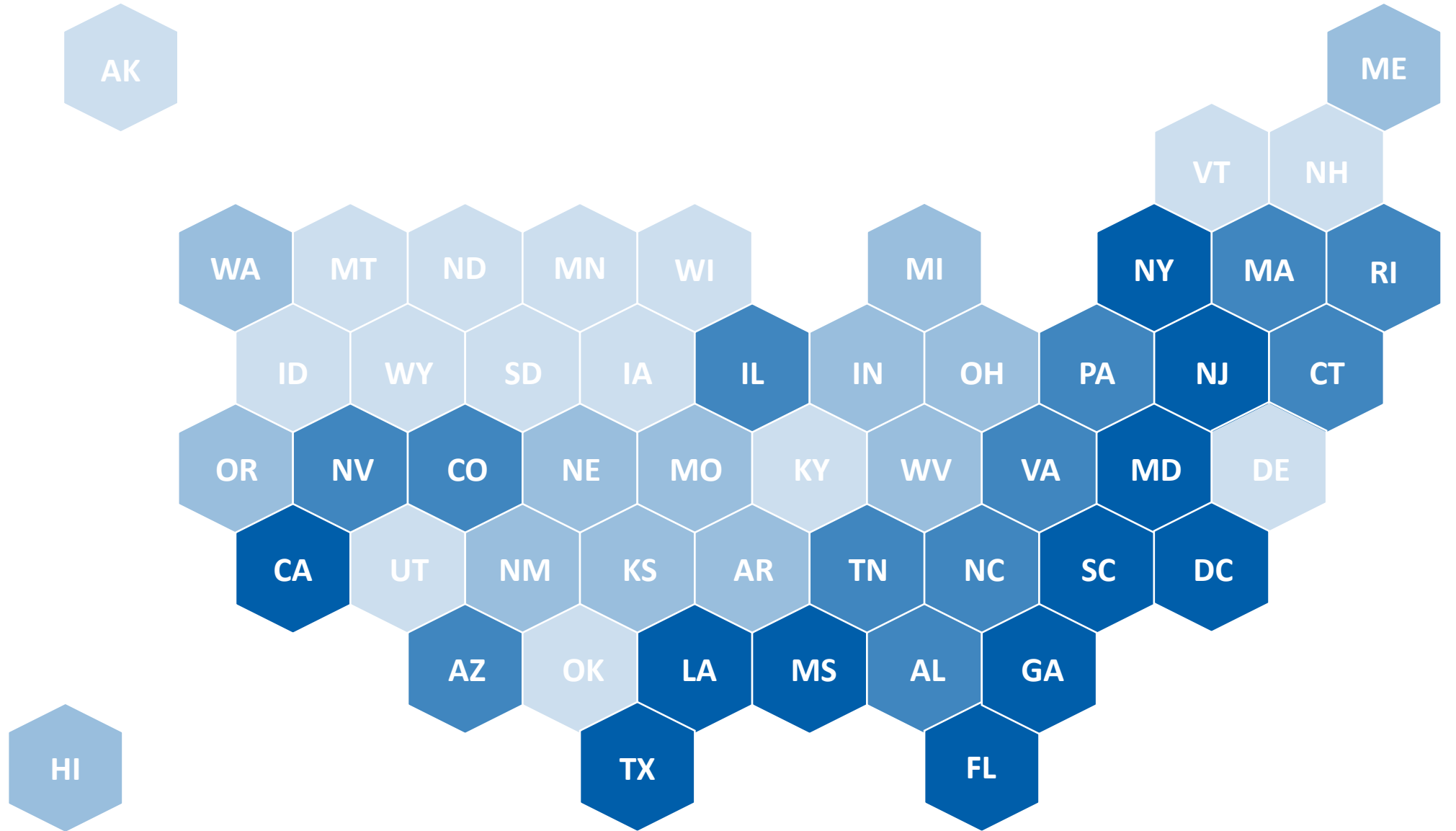
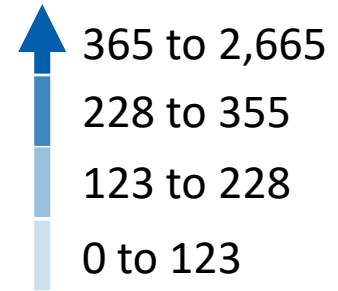
Living with HIV

HIV rates per 100,000 adults and adolescents



Living with HIV

HIV rates per
100,000 adults
and adolescents



Living with HIV



States where HIV is **most prevalent**



D.C.



N.Y.



Md.



Fla.



Ga.



La.



States where HIV is **least prevalent**



N.D.



Mont.



S.D.



Idaho



Iowa



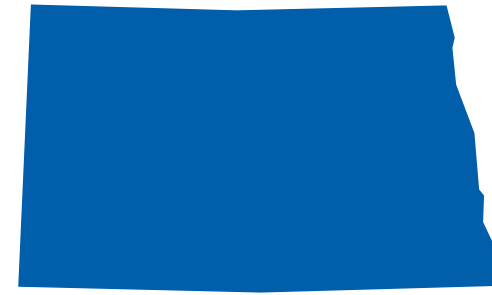
Alaska

Living with HIV



HIV is **most prevalent**
in **Washington, D.C.**

2,665 per 100,000 people



HIV is **least prevalent**
in **North Dakota**

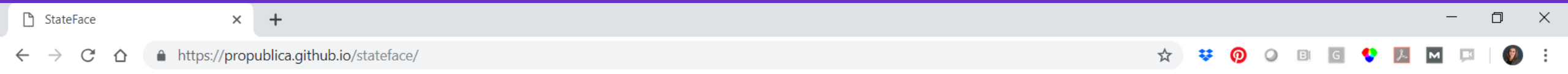
50 per 100,000 people























































HIV is **most prevalent**
in **Washington, D.C.**

2,665 per 100,000 people

The StateFace Font



StateFace Keyboard Map

 Ala.	B	 La.	R	 Okla.	j
 Alaska	A	 Maine	U	 Ore.	k
 Ariz.	D	 Md.	T	 Pa.	l
 Ark.	C	 Mass.	S	 R.I.	m
 Calif.	E	 Mich.	V	 S.C.	n
 Colo.	F	 Minn.	W	 S.D.	o
 Conn.	G	 Miss.	Y	 Tenn.	p
 Del.	H	 Mo.	X	 Texas	q
 D.C.	y	 Mont.	Z	 U.S.	z
 Fla.	I	 Neb.	c	 Utah	r
 Ga.	J	 Nev.	g	 Vt.	t
 Hawaii	K	 N.H.	d	 Va.	s
 Idaho	M	 N.J.	e	 Wash.	u
 Ill.	N	 N.M.	f	 W.Va.	w
 Ind.	O	 N.Y.	h	 Wis.	v
 Iowa	L	 N.C.	a	 Wyo.	x
 Kan.	P	 N.D.	b		
 Ky.	Q	 Ohio	i		

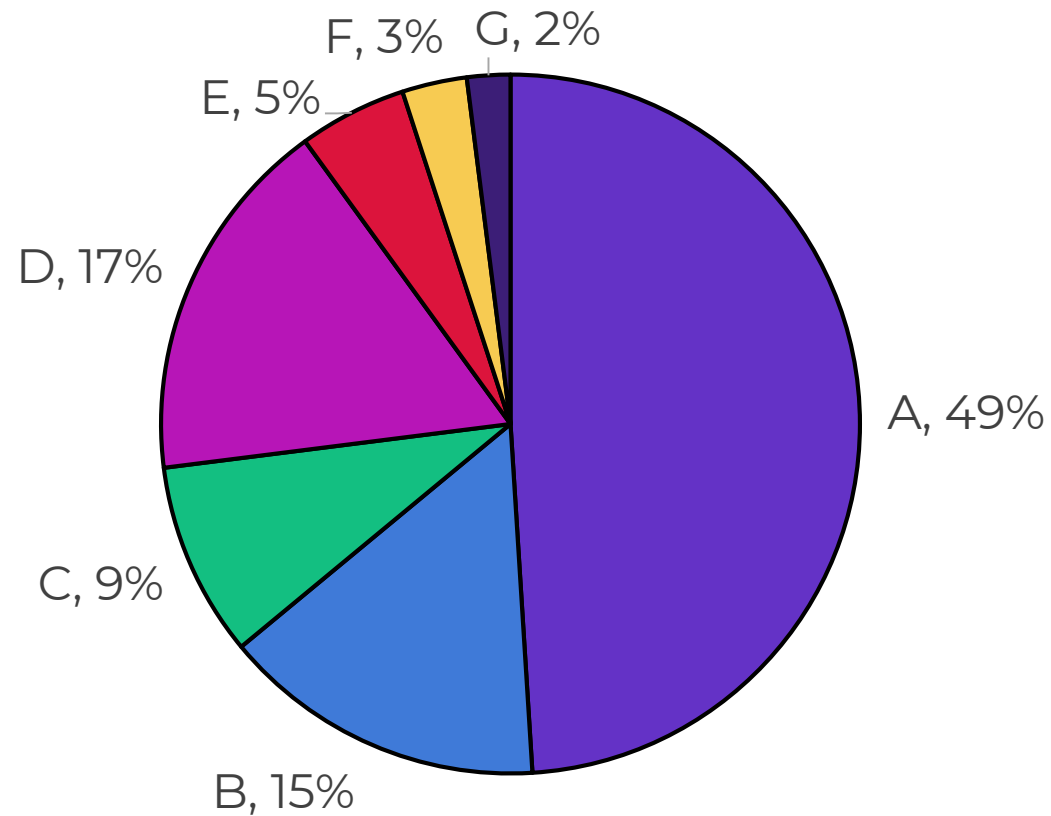
Projection Info

Each state is projected using a relevant state plane projection, and the U.S. (lowercase) is

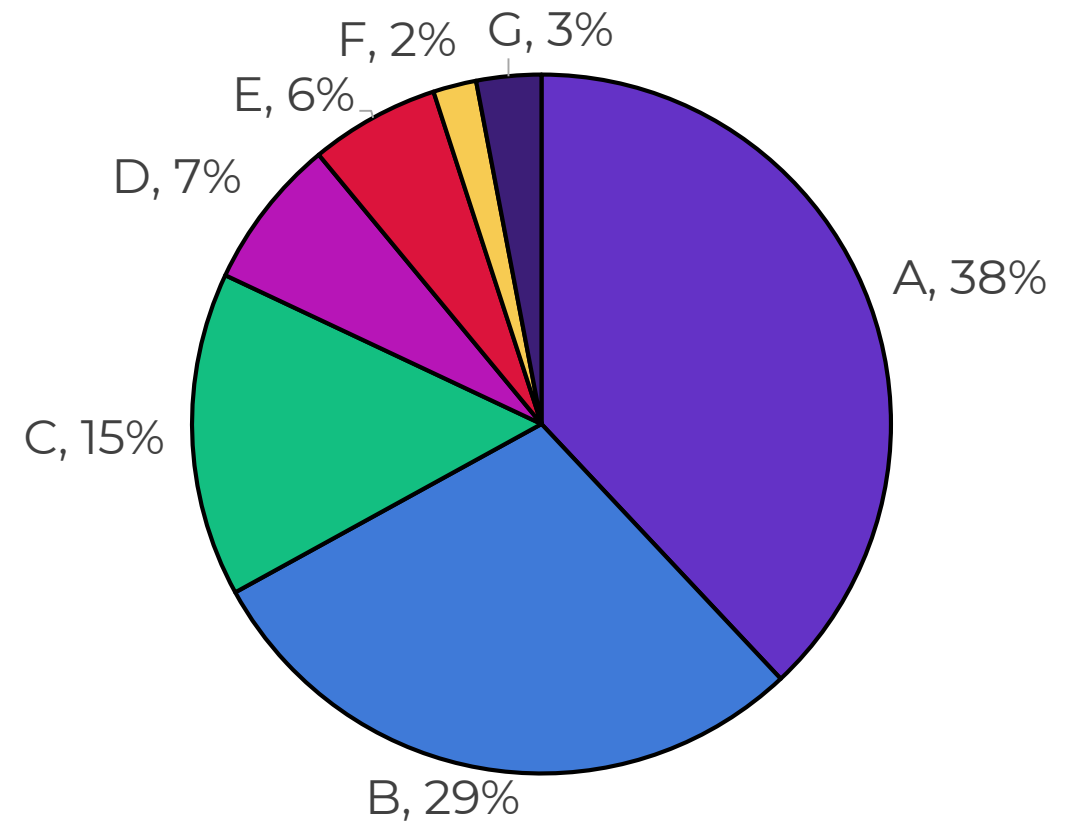
<https://propublica.github.io/stateface/>

ABC-Funded Research

ABC-Funded Research
Projects by Topic, 2012-2014

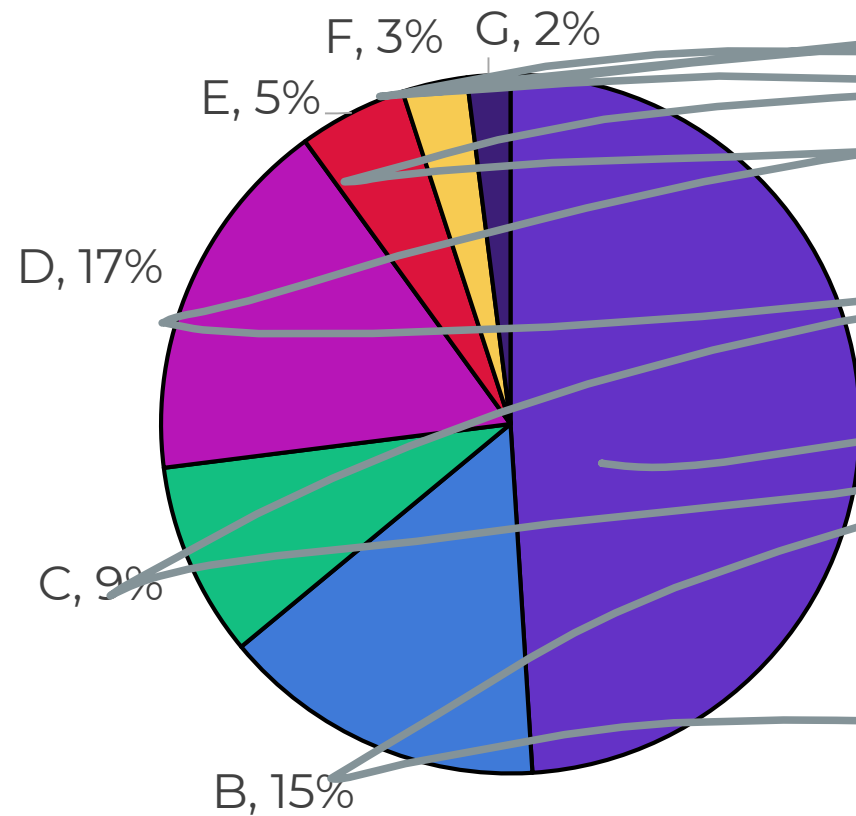


ABC-Funded Research
Projects by Topic, 2015-2017

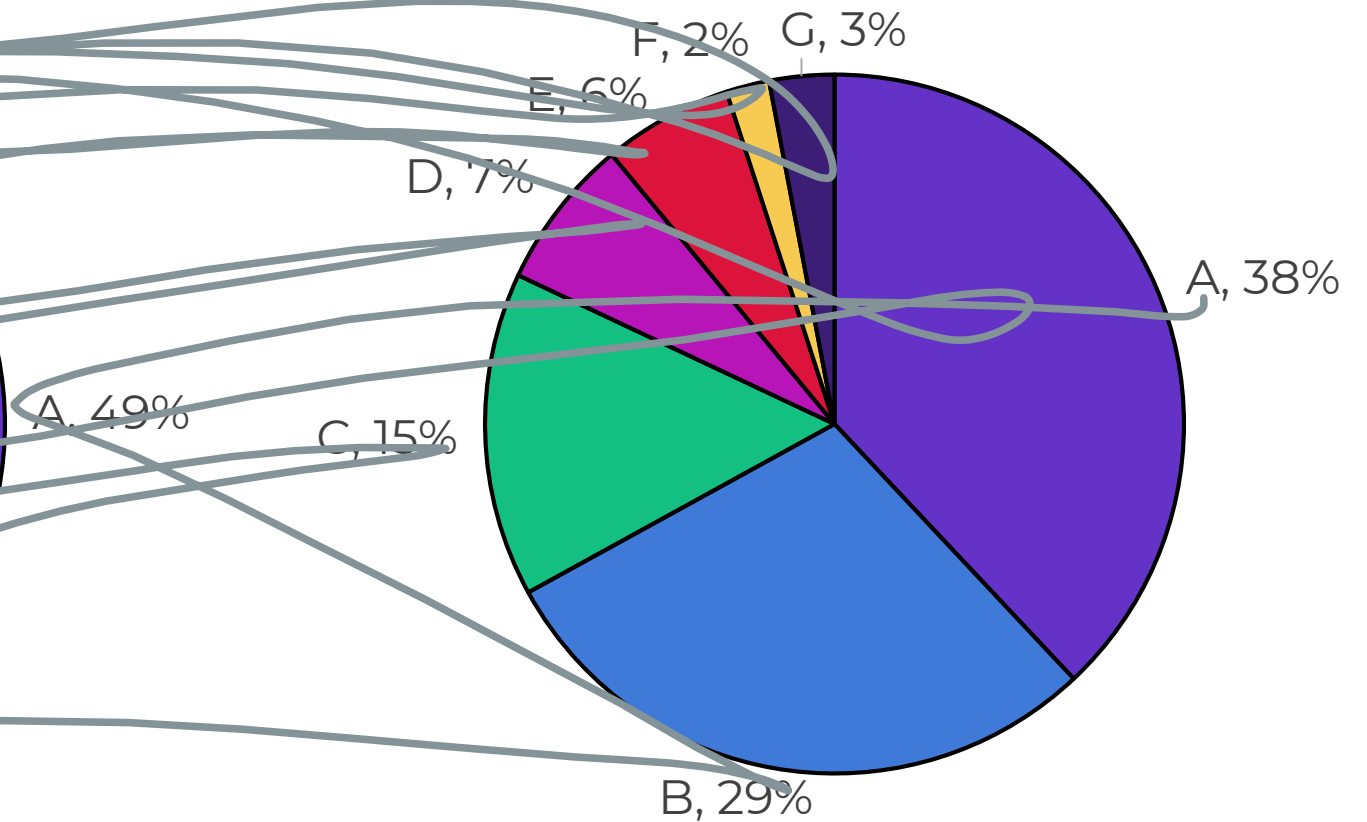


ABC-Funded Research

ABC-Funded Research
Projects by Topic, 2012-2014

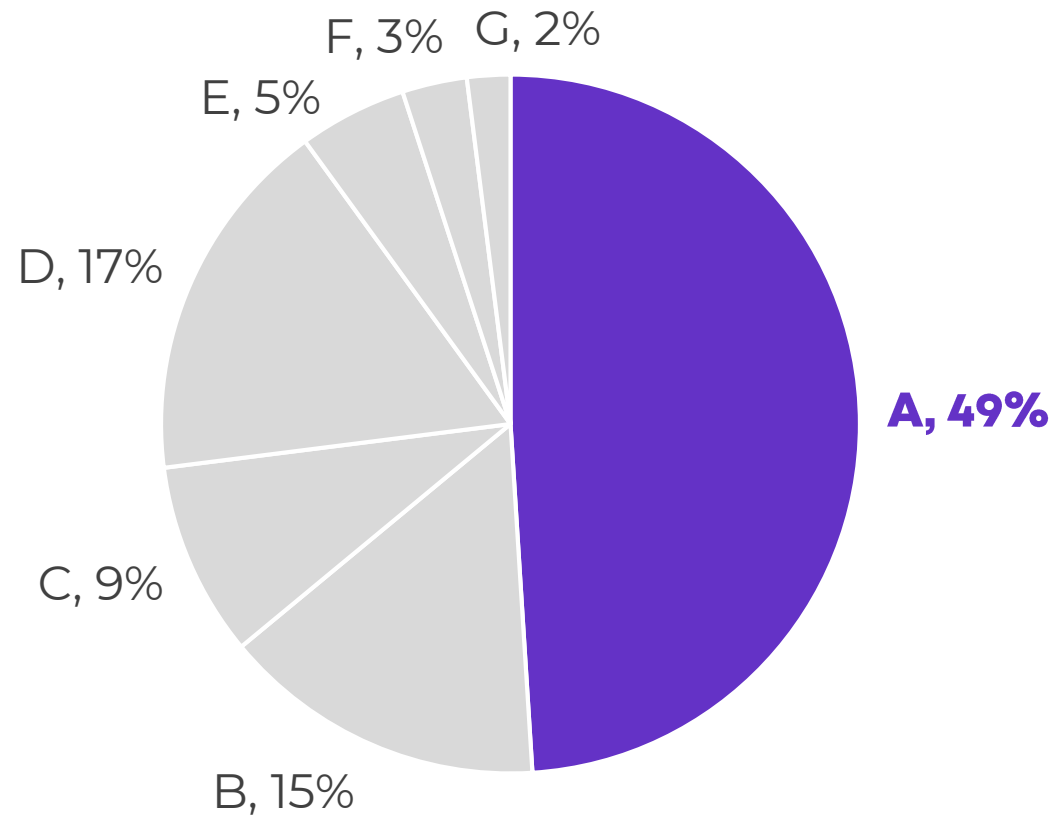


ABC-Funded Research
Projects by Topic, 2015-2017

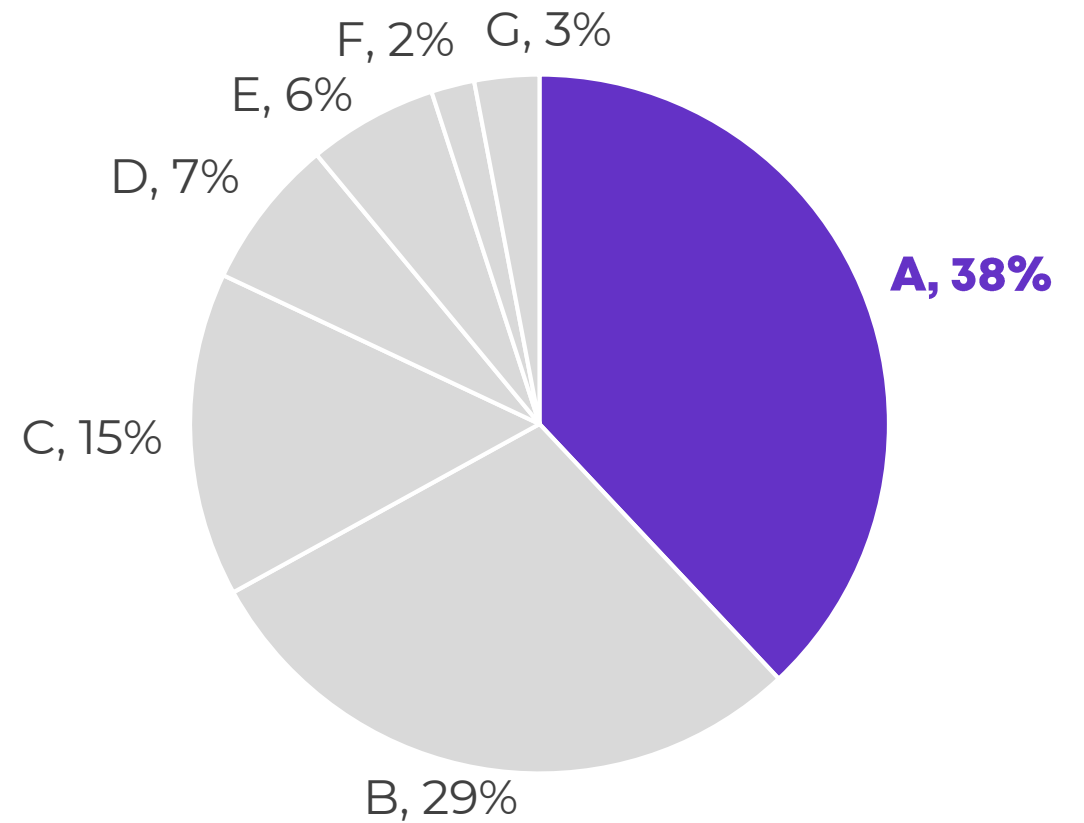


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2012-2014

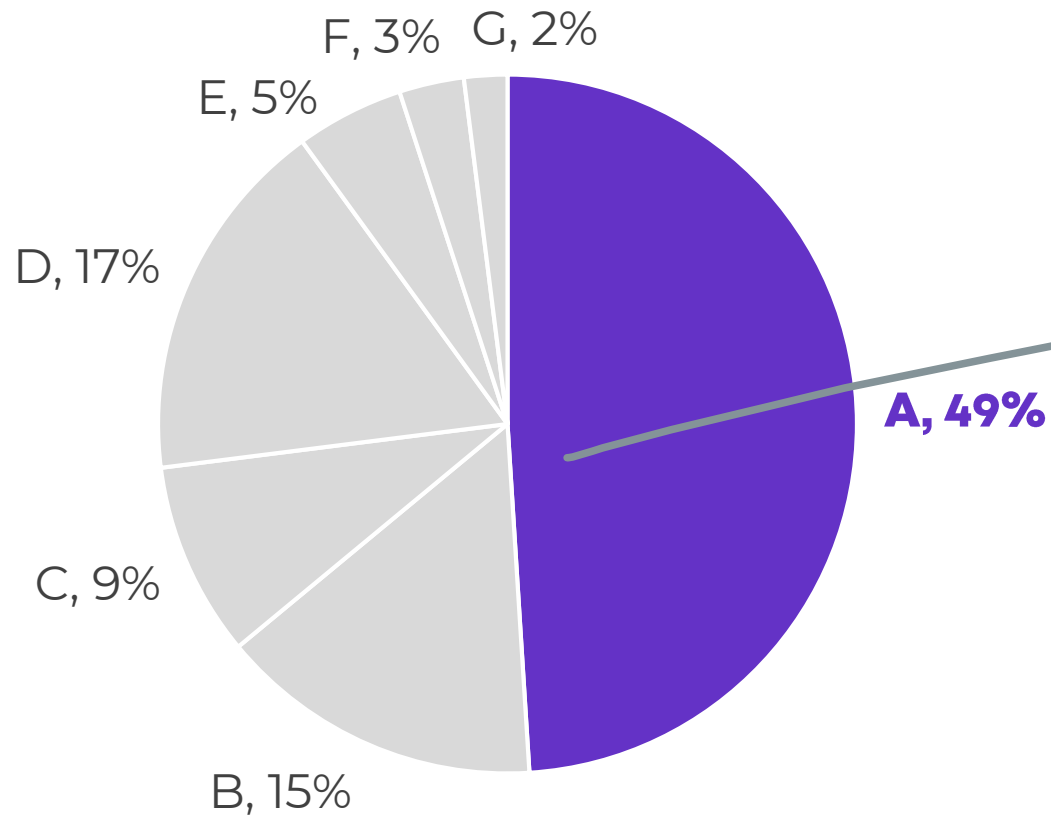


2015-2017

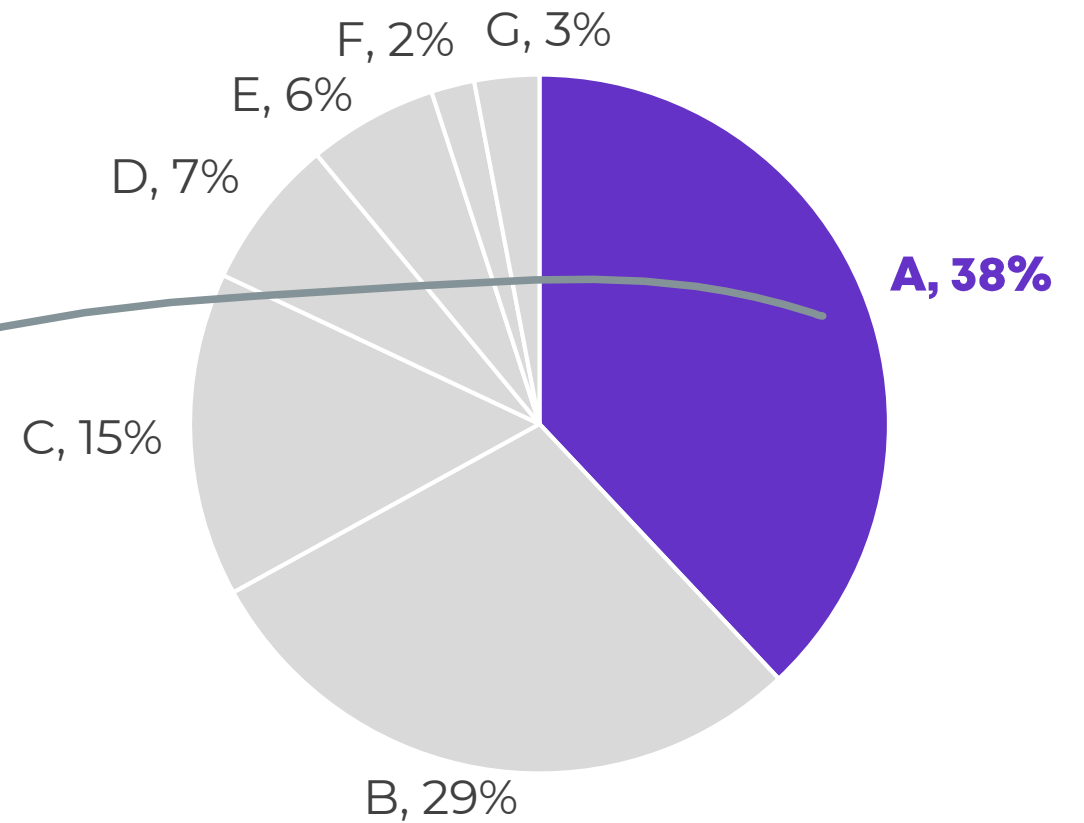


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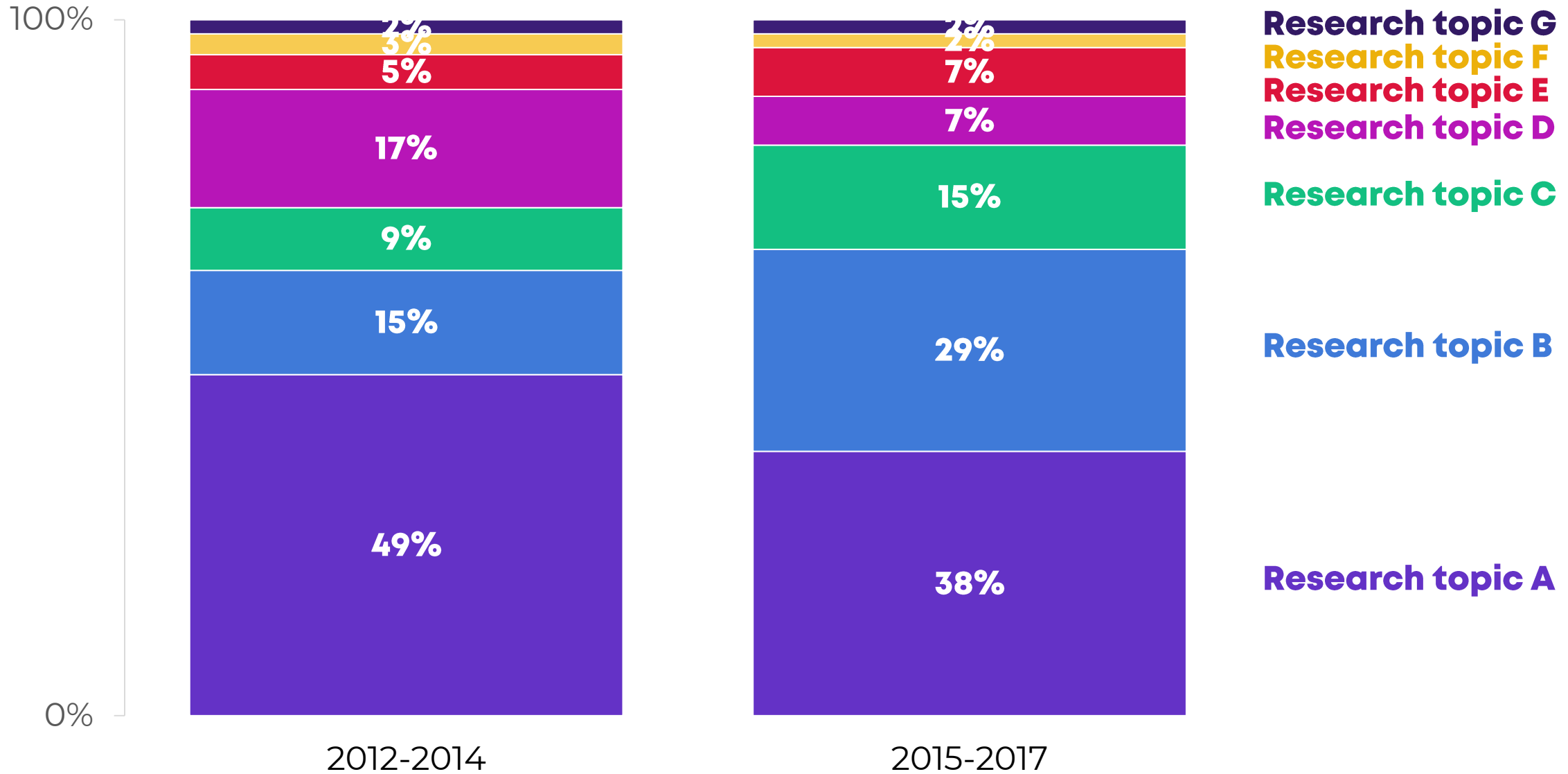
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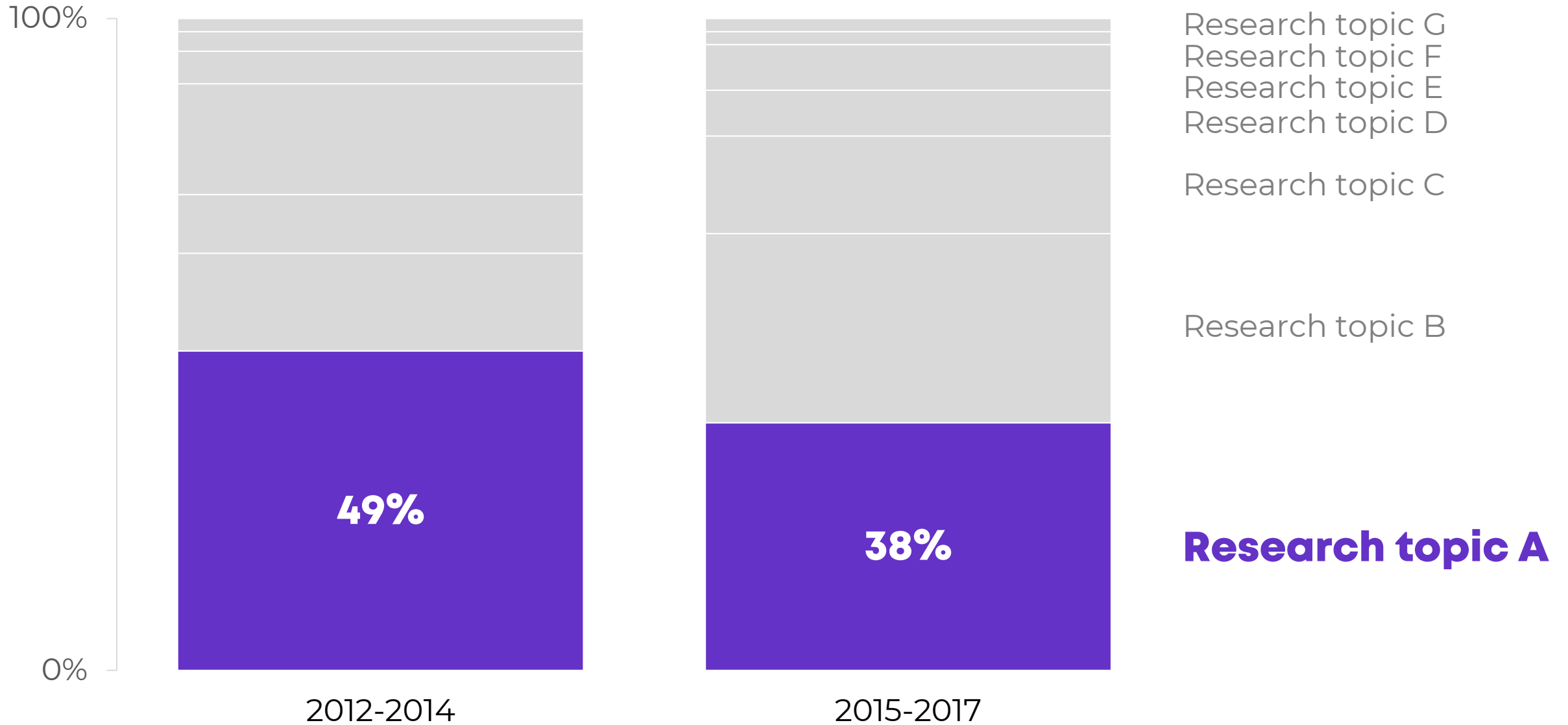
2015-2017



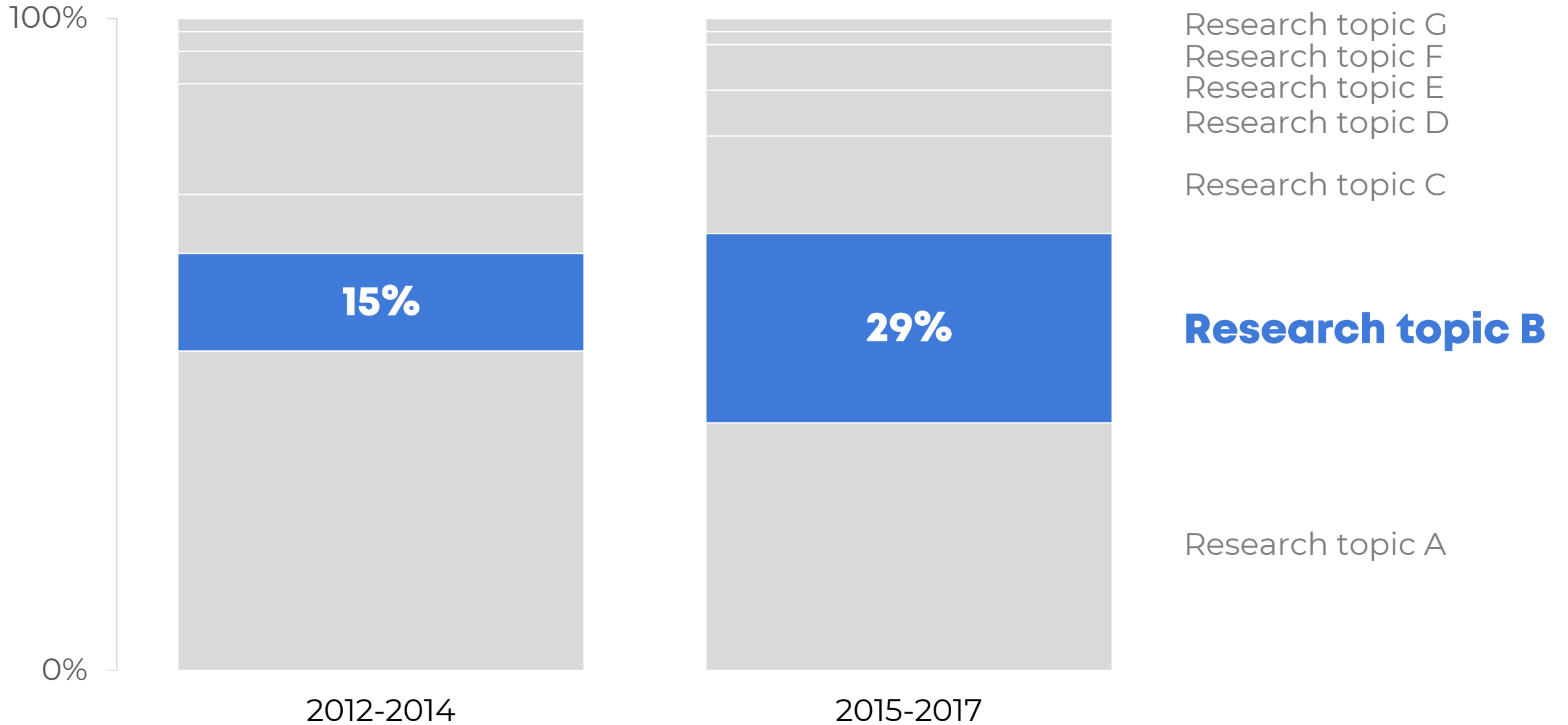
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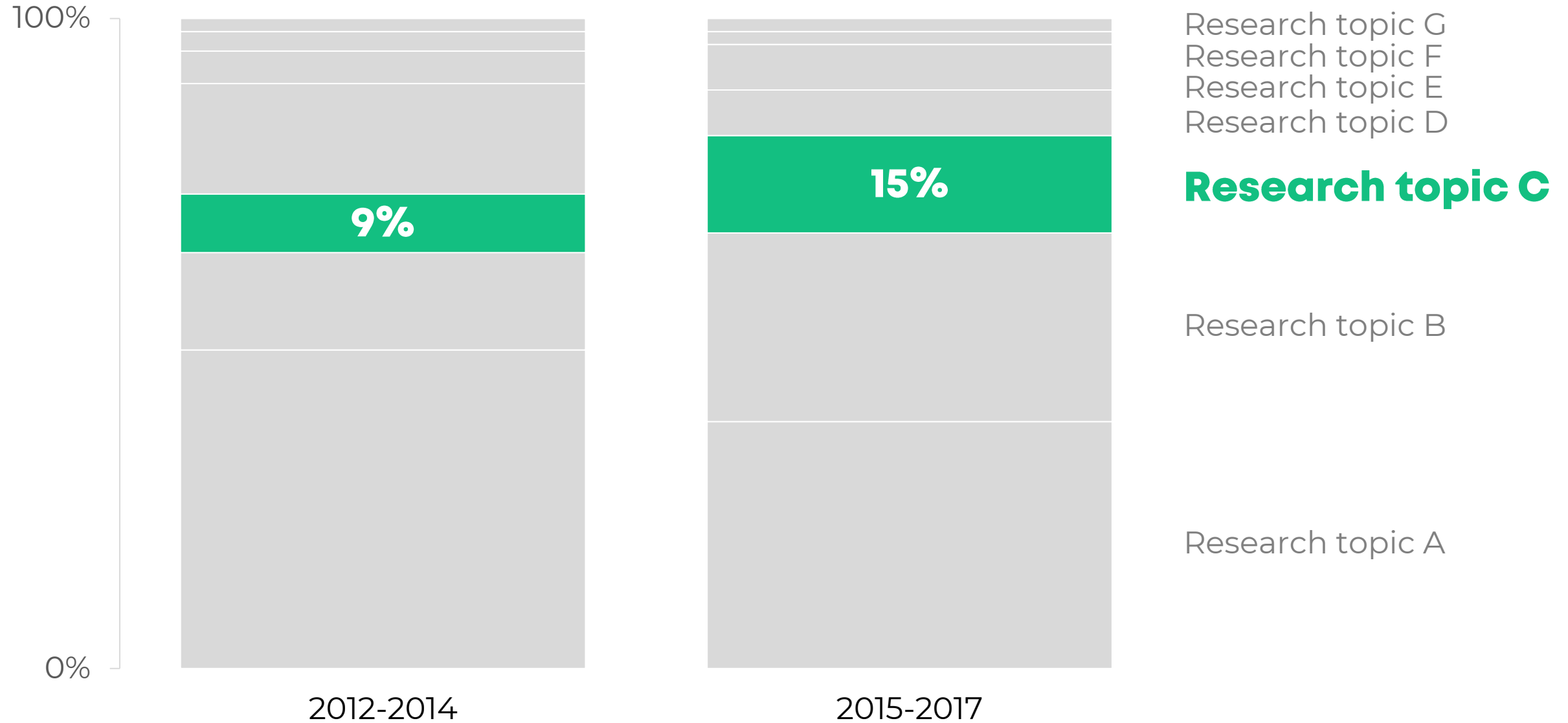
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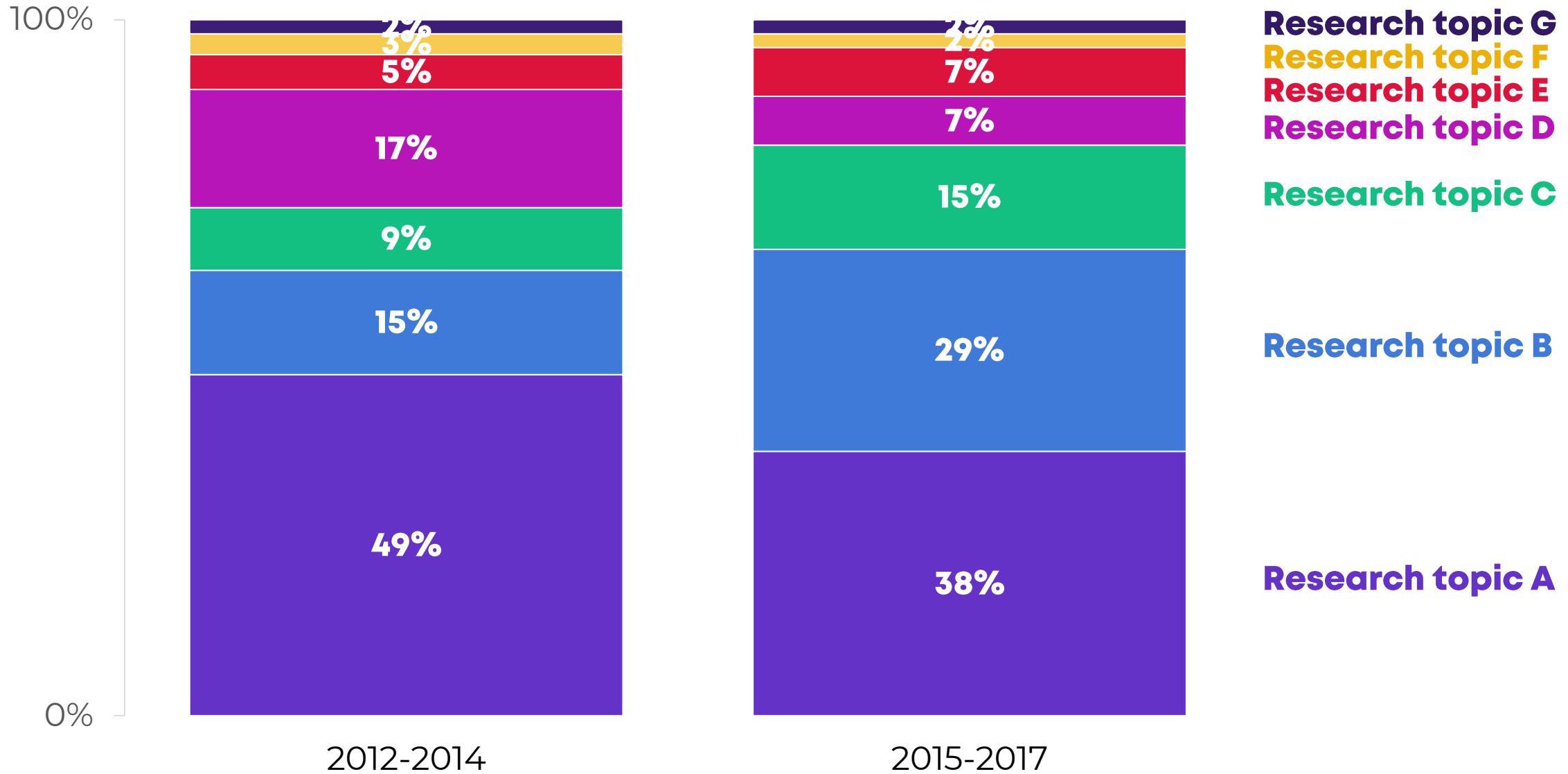
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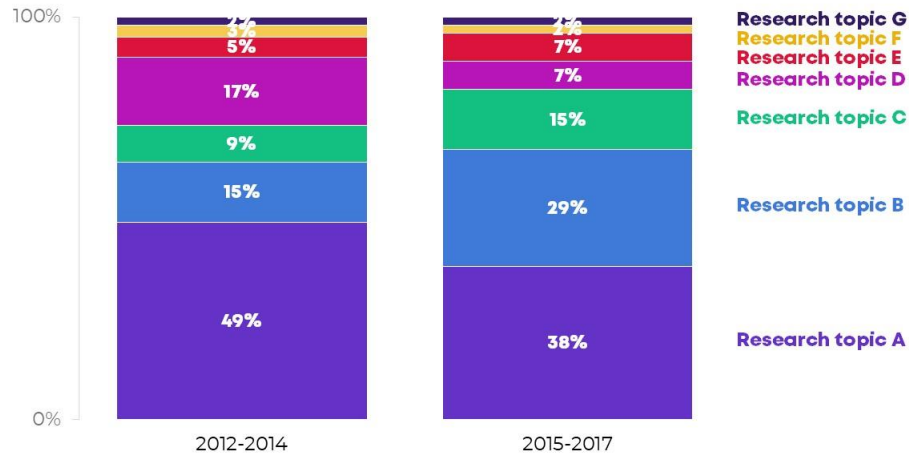


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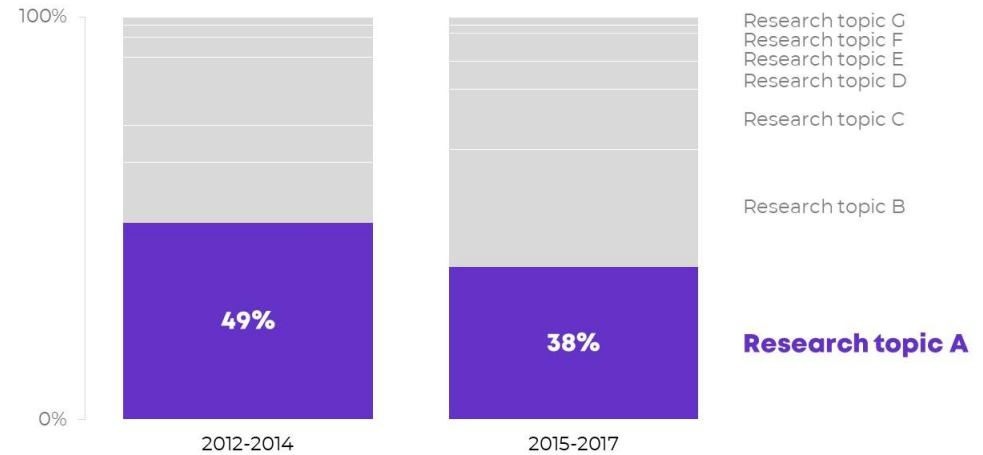
Storyboarding

ABC-Funded Research



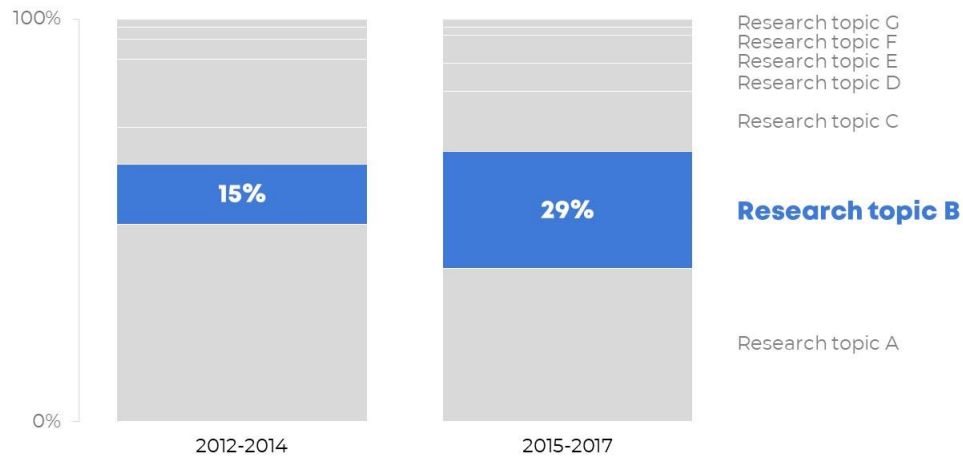
depict data studio

ABC-Funded Research



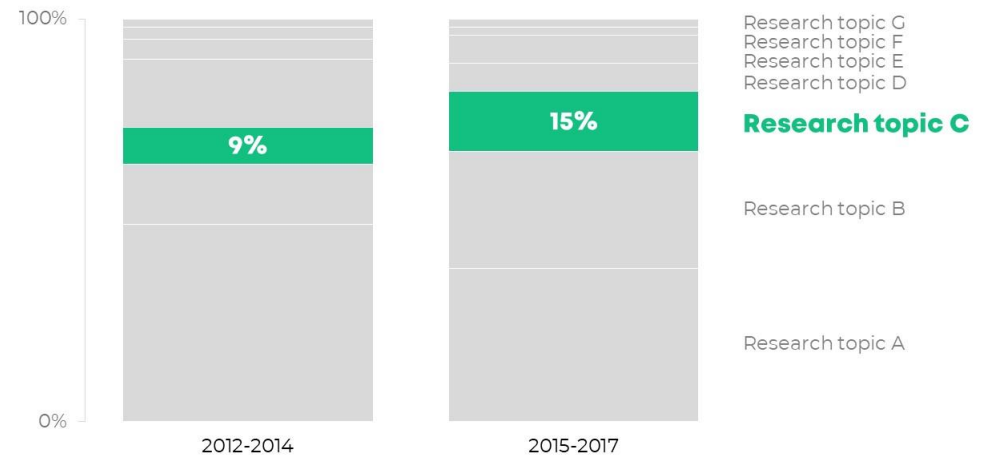
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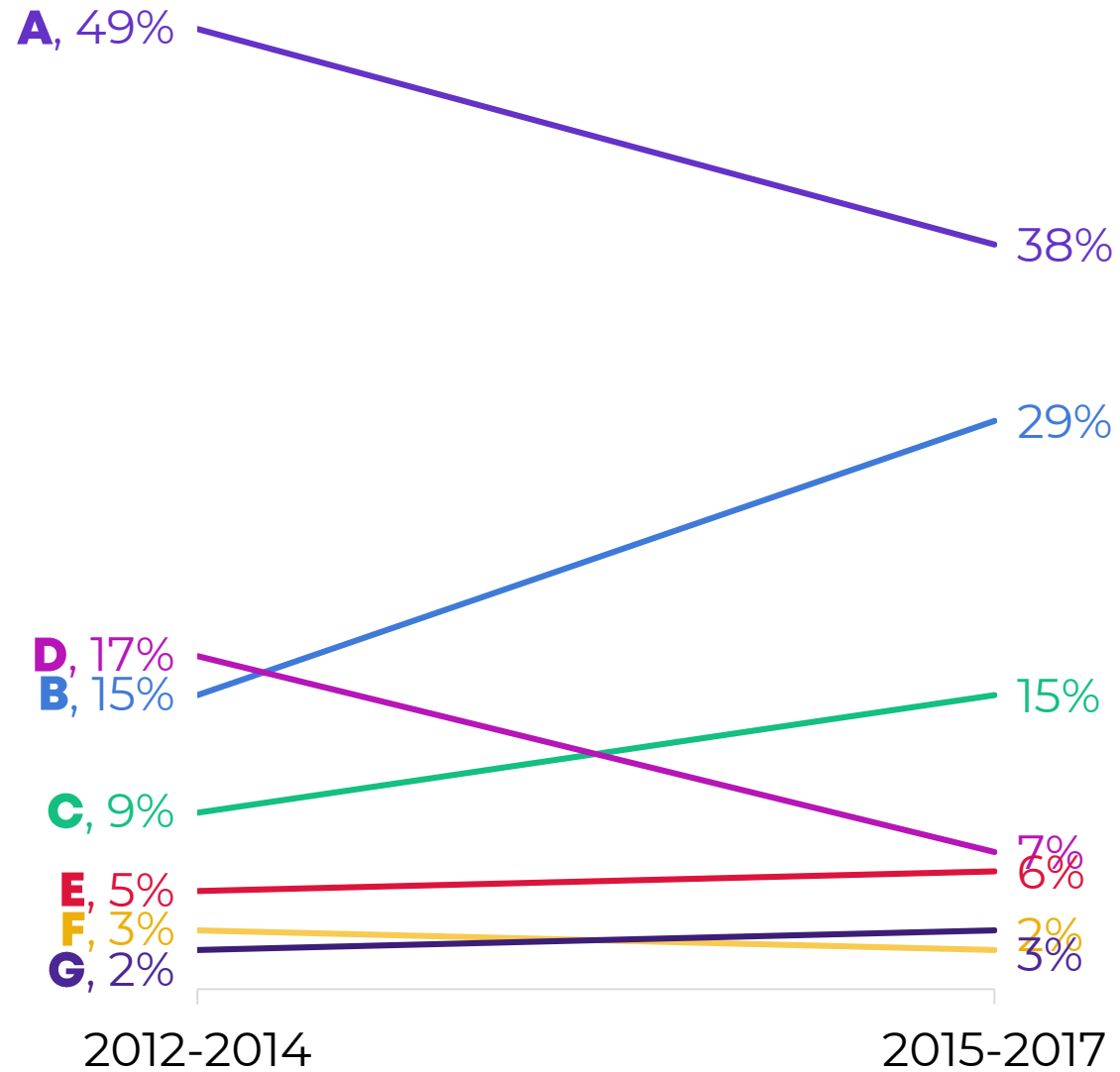
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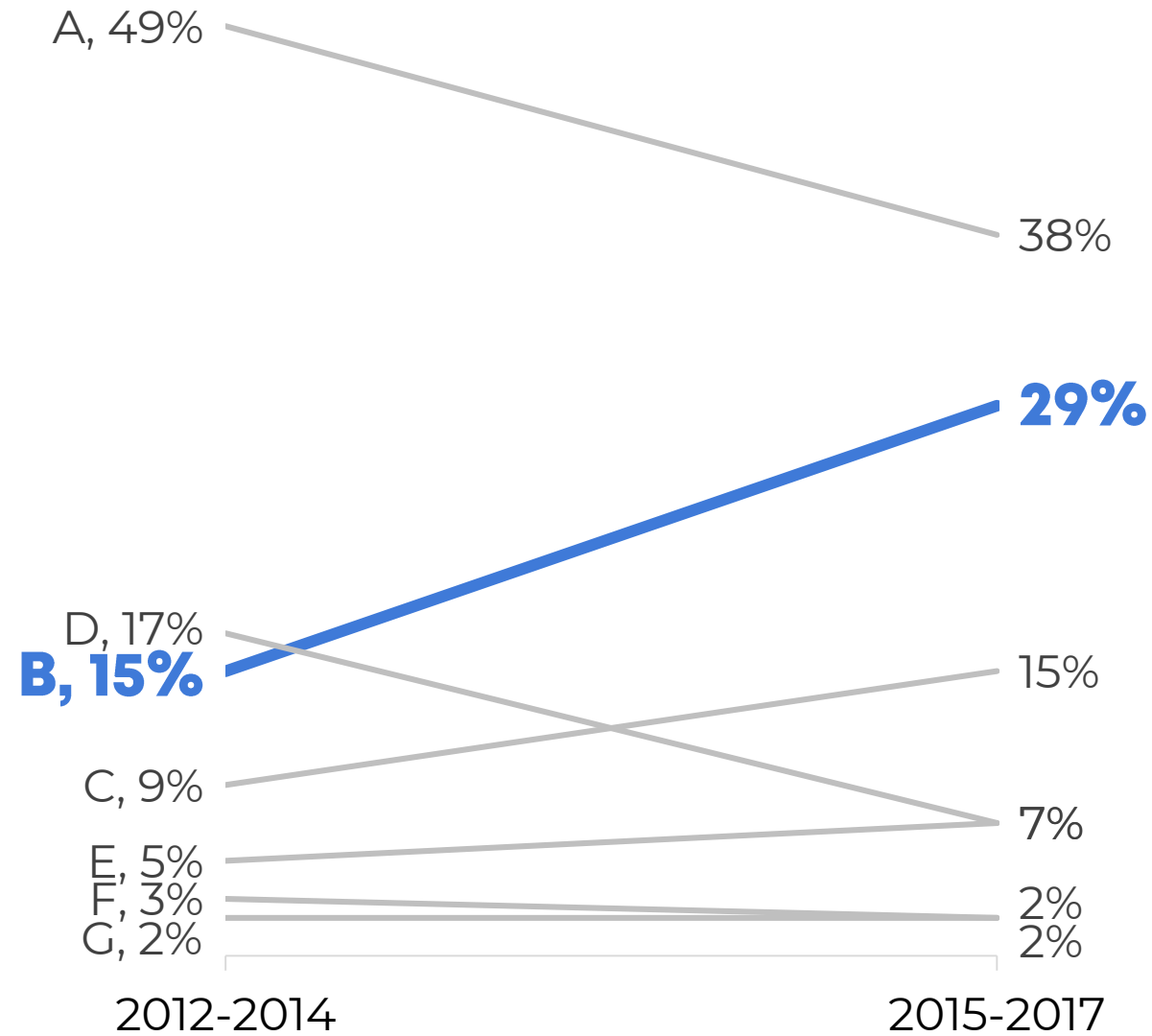


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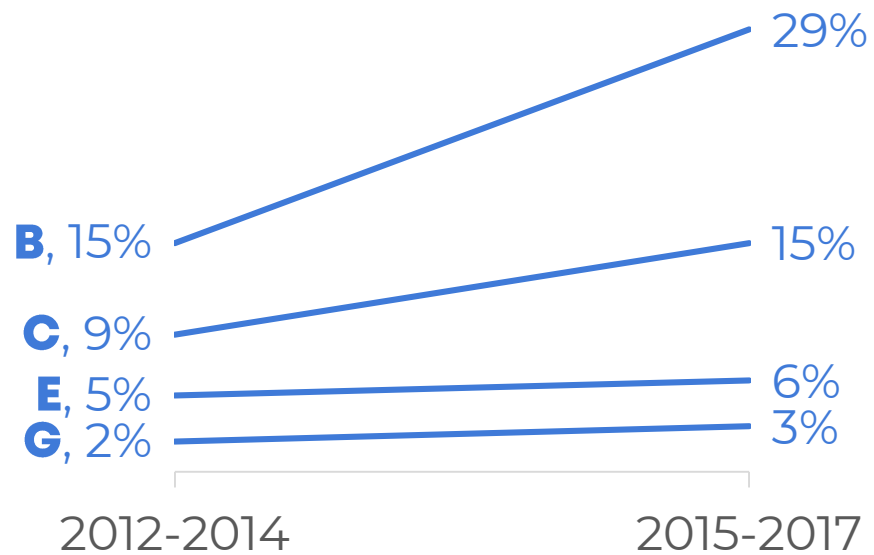


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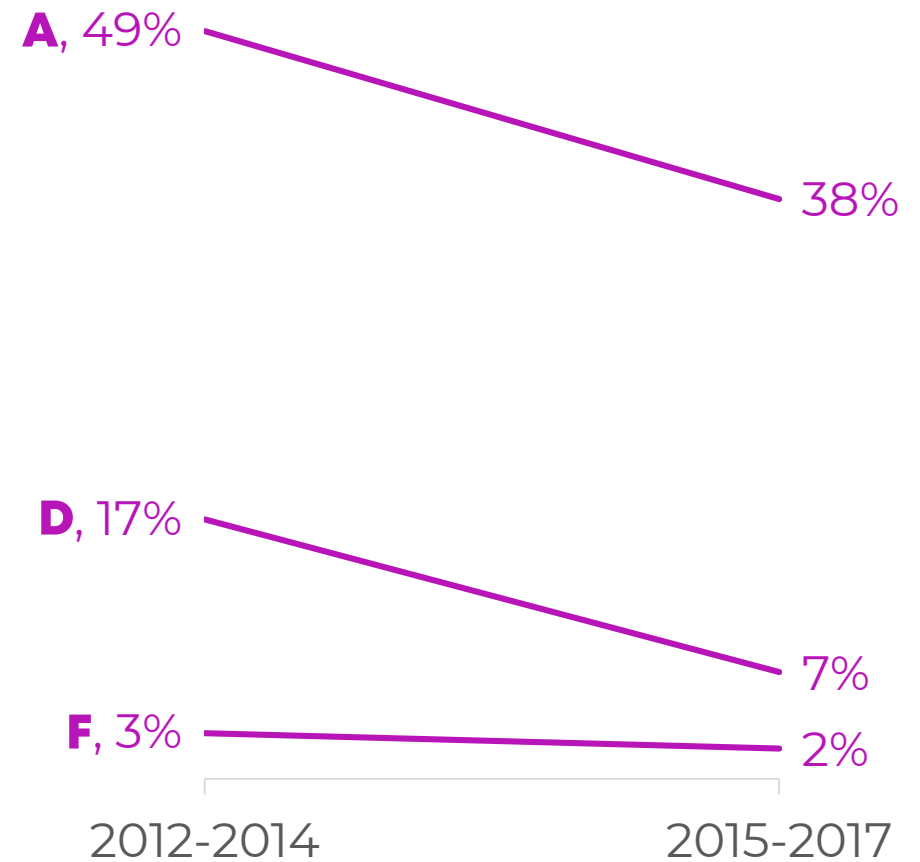


ABC-Funded Research

⬆️ Increased Funding



⬇️ Decreased Funding



ABC-Funded Research



Increased Funding

from 2012-2014
to 2015-2017

Research topic B

15% → 29%

Research topic C

9% → 15%

Research topic E

5% → 7%

Research topic G

2% → 3%



Decreased Funding

from 2012-2014
to 2015-2017

Research topic A

49% ← 38%

Research topic D

17% ← 7%

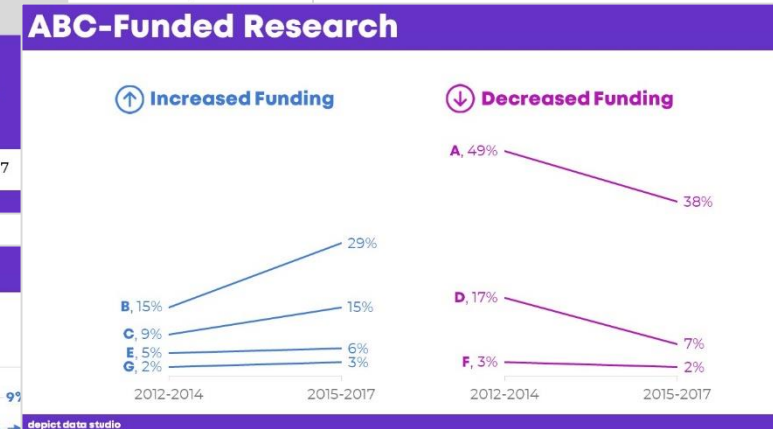
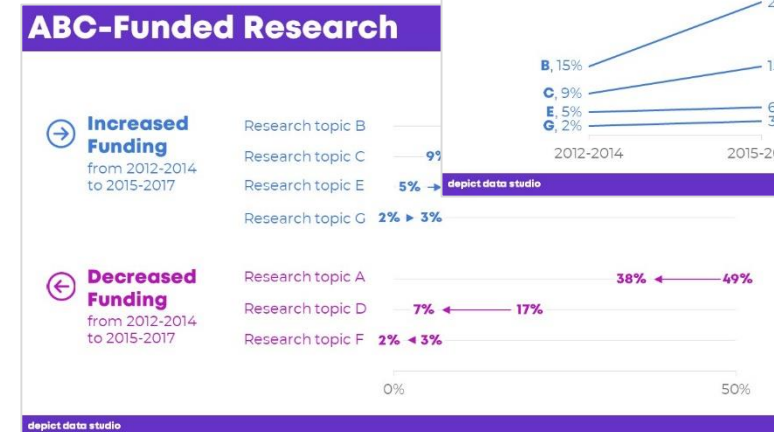
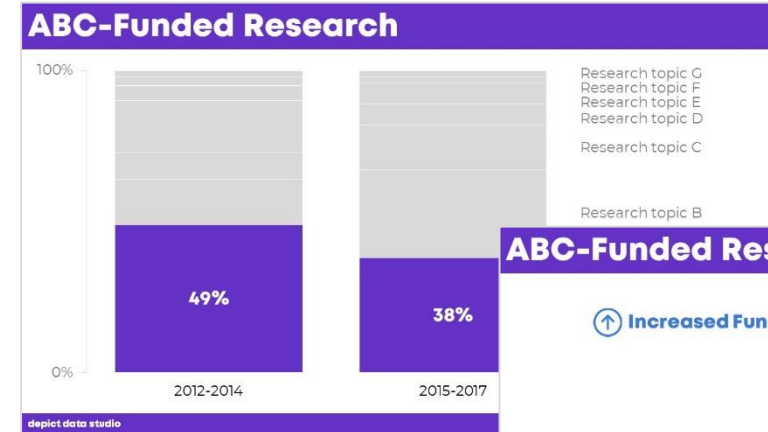
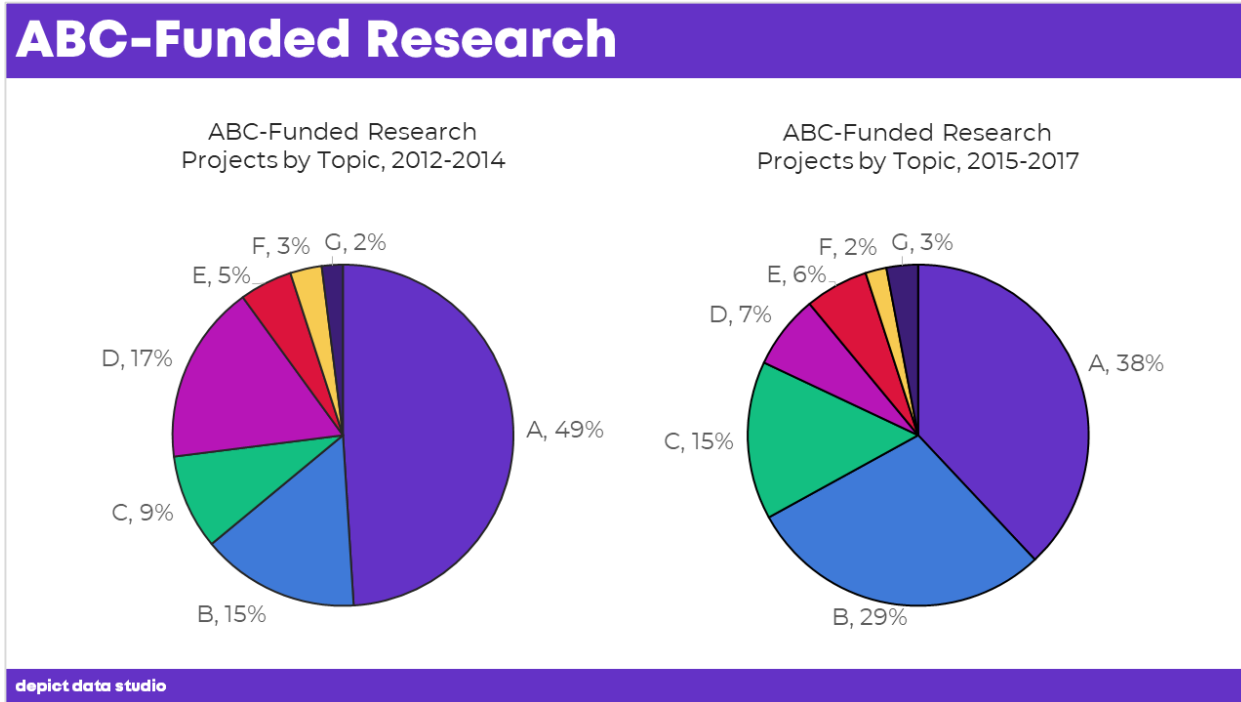
Research topic F

3% ← 2%

0%

50%

Comparing Across Two Pies



Take Notes!

- Add icons to increase memorability.

- Try a hex map to avoid the Alaska Effect.

- Avoid ALL CAPS because it takes longer to read.



Next Steps

- Try a Sankey Diagram for visualizing flow/pathways/sequences
- Try small multiples the next time you encounter a spaghetti graph
- Make sure pies only have 2 slices, and place the dark slice in the upper right corner
- Use real human icons (WeePeople)
- Horizontal text only (no diagonal or vertical text)
- Use whole numbers (“1 in 3”) instead of percentages (“33%”)
- Color code the chapters/sections
- Get rid of green-red (try blue-red instead)
- Try waffle charts
- Declutter
- Use storytelling
- Don't use ALL CAPS



Stay in Touch

Ann K. Emery

DepictDataStudio.com

@AnnKEmery



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