

A PRESENTATION FROM

DATA DOZEN

a visual analytics studio

ERIN WALDRON FROM DATA DOZEN

DESIGN CHECKLIST

ENGAGING YOUR AUDIENCE WITH BEAUTIFUL, FUNCTIONAL DATA DESIGN



PERSONAL QUESTION

How do you put together **IKEA** furniture?



PERSONAL QUESTION

How do you put together **IKEA** furniture?
Do you read the instructions?



PERSONAL QUESTION

How do you put together **IKEA** furniture?

Do you read the instructions? Or just grab the allen wrench?



TIME FOR SOME HONESTY.

Here's how we **imagine** folks read our visualizations.



IMAGINED PATH

IMAGINED PATH

Vaccination rates by county social vulnerability

IMAGINED PATH

Vaccination rates by county social vulnerability

Share of total population fully vaccinated. Circles sized by county population.

IMAGINED PATH

Vaccination rates by county social vulnerability

Share of total population fully vaccinated. Circles sized by county population.

<20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% >80%

IMAGINED PATH

Vaccination rates by county social vulnerability

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<20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% >80%

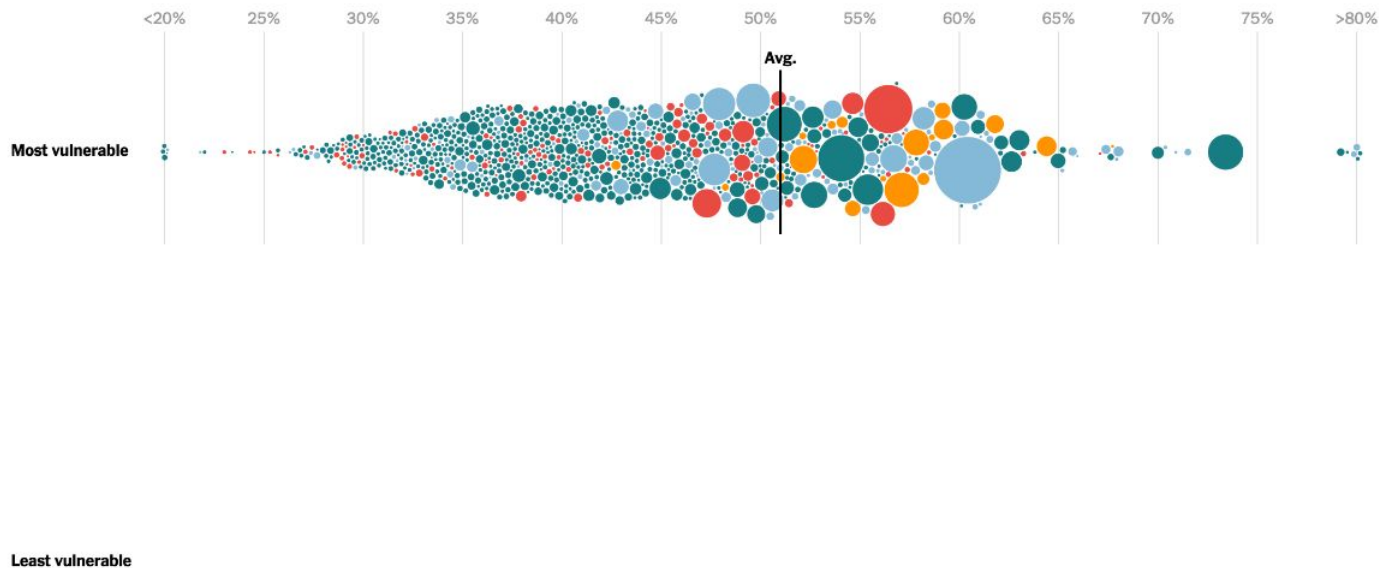
Most vulnerable

Least vulnerable

IMAGINED PATH

Vaccination rates by county social vulnerability

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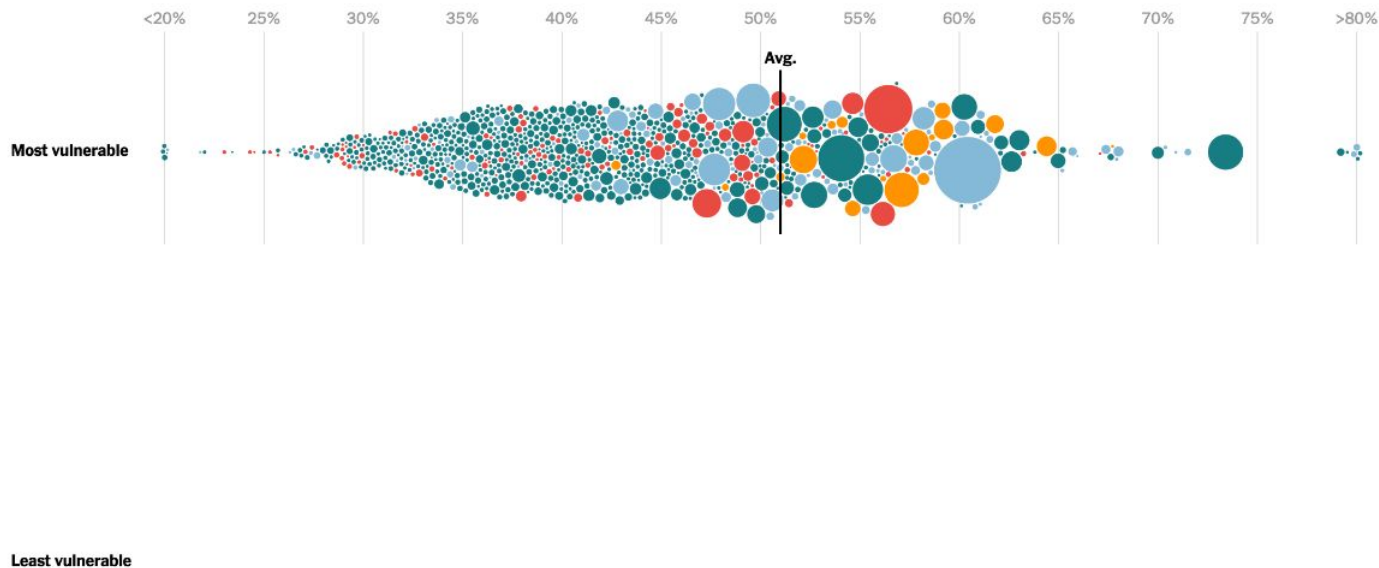


IMAGINED PATH

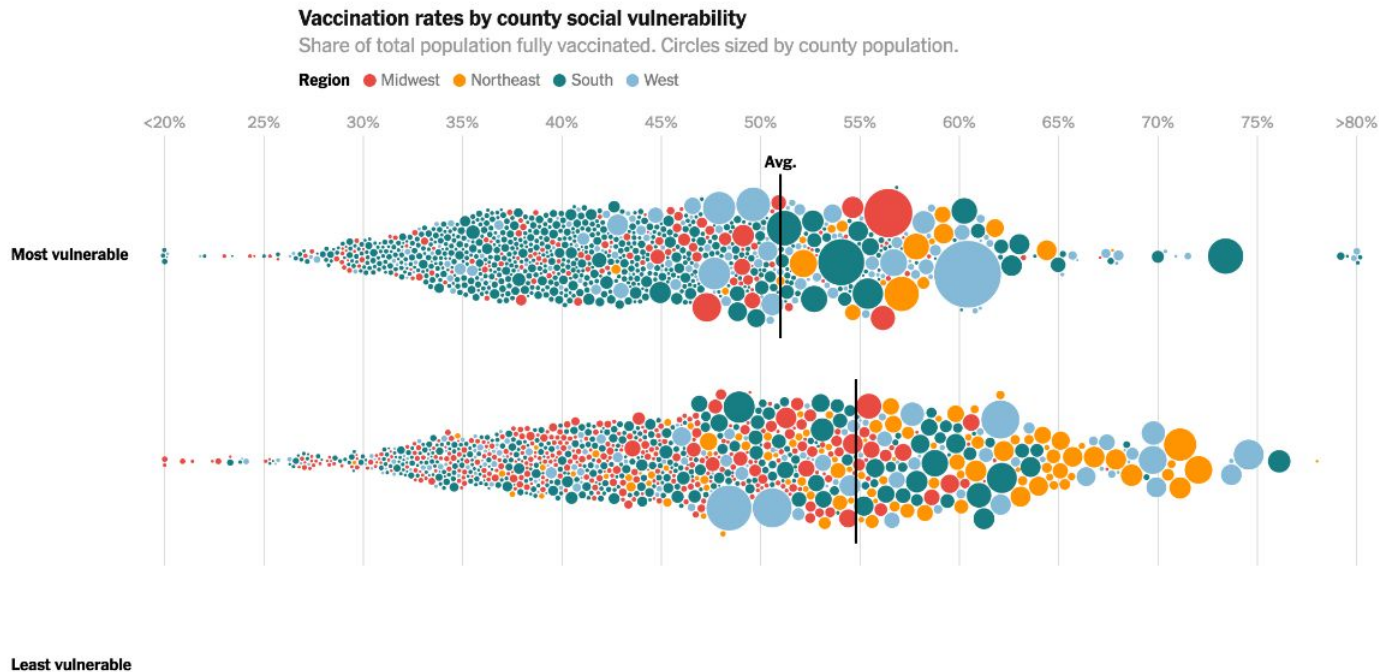
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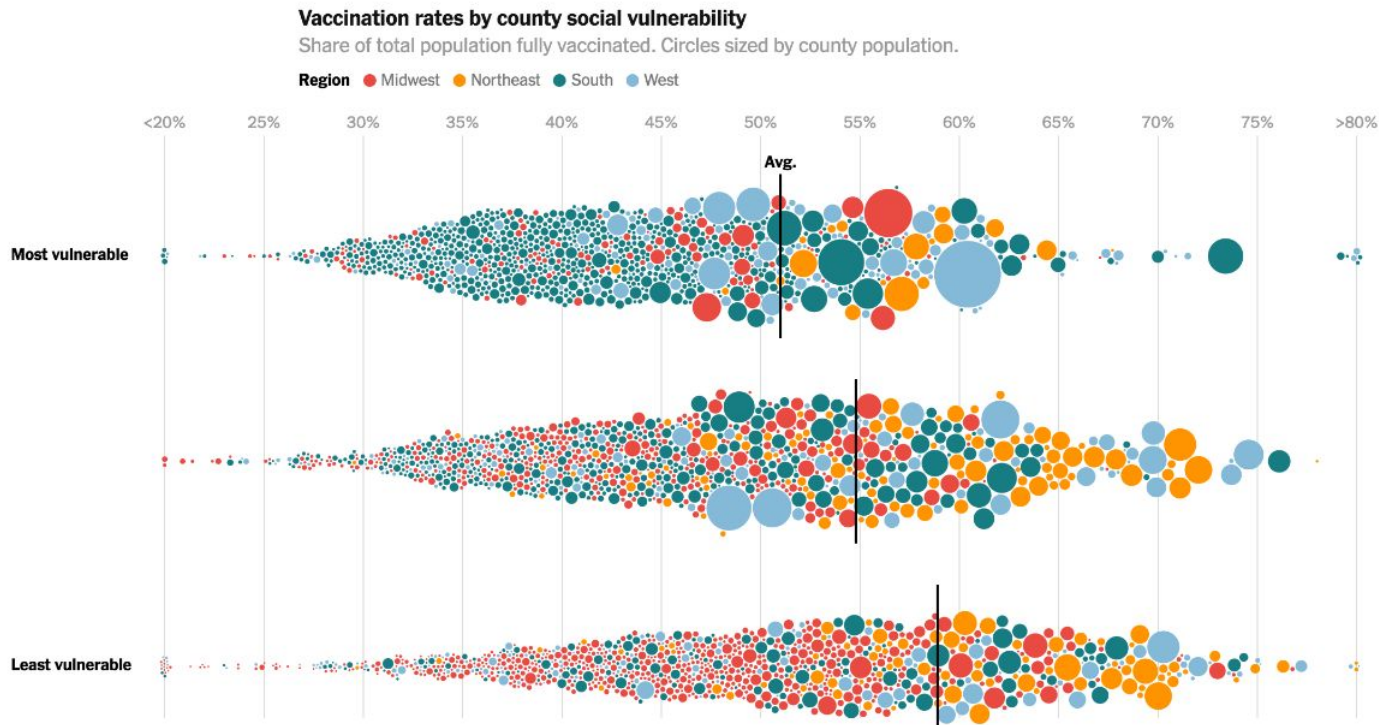
Region ● Midwest ● Northeast ● South ● West



IMAGINED PATH



IMAGINED PATH

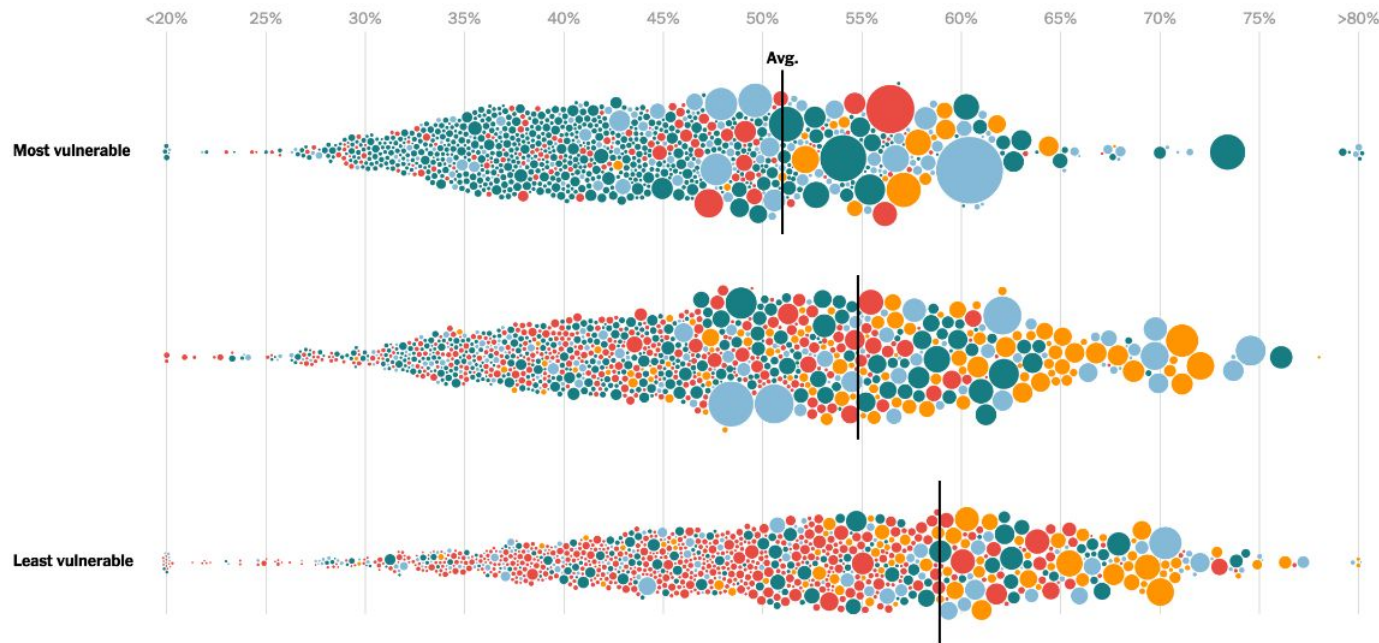


IMAGINED PATH

Vaccination rates by county social vulnerability

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Region ● Midwest ● Northeast ● South ● West



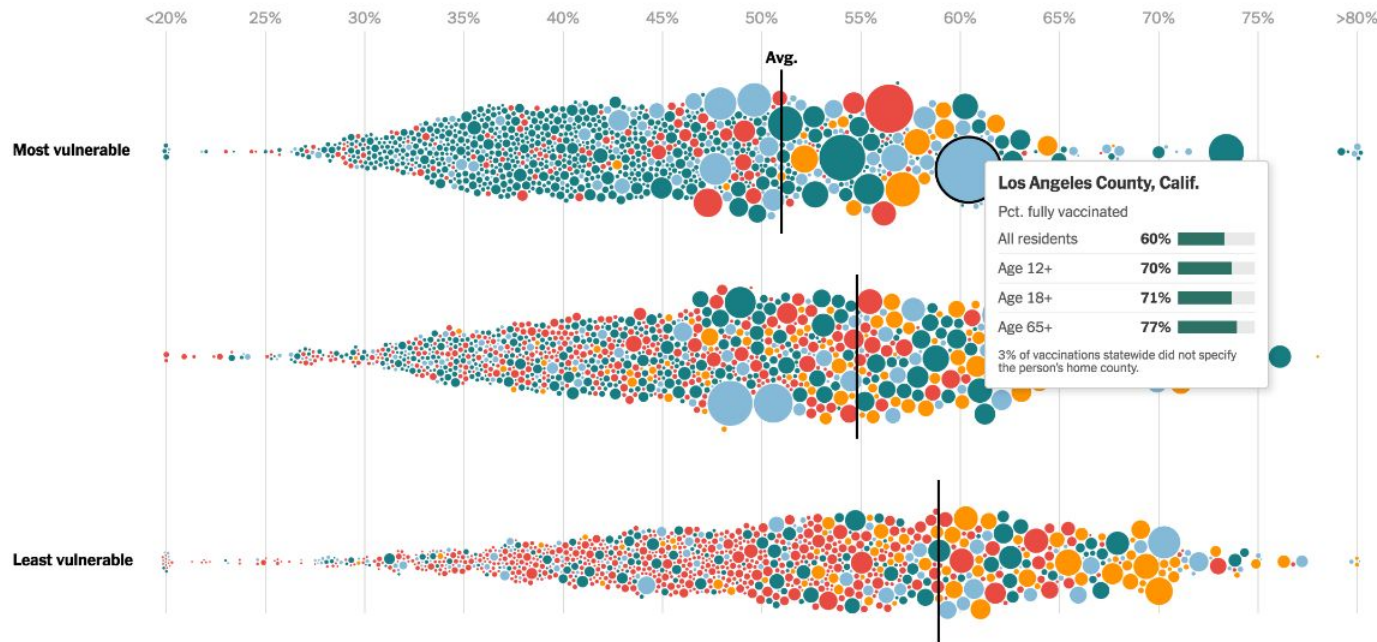
Sources: [Centers for Disease Control and Prevention](#); [Texas Department of State Health Services](#); [Colorado Department of Public Health & Environment](#); [Massachusetts Department of Public Health](#); U.S. Census Bureau | Note: No C.D.C. data available for Hawaii, Texas and some counties. Georgia, Vermont and West Virginia were excluded because more than a quarter of data is missing.

IMAGINED PATH

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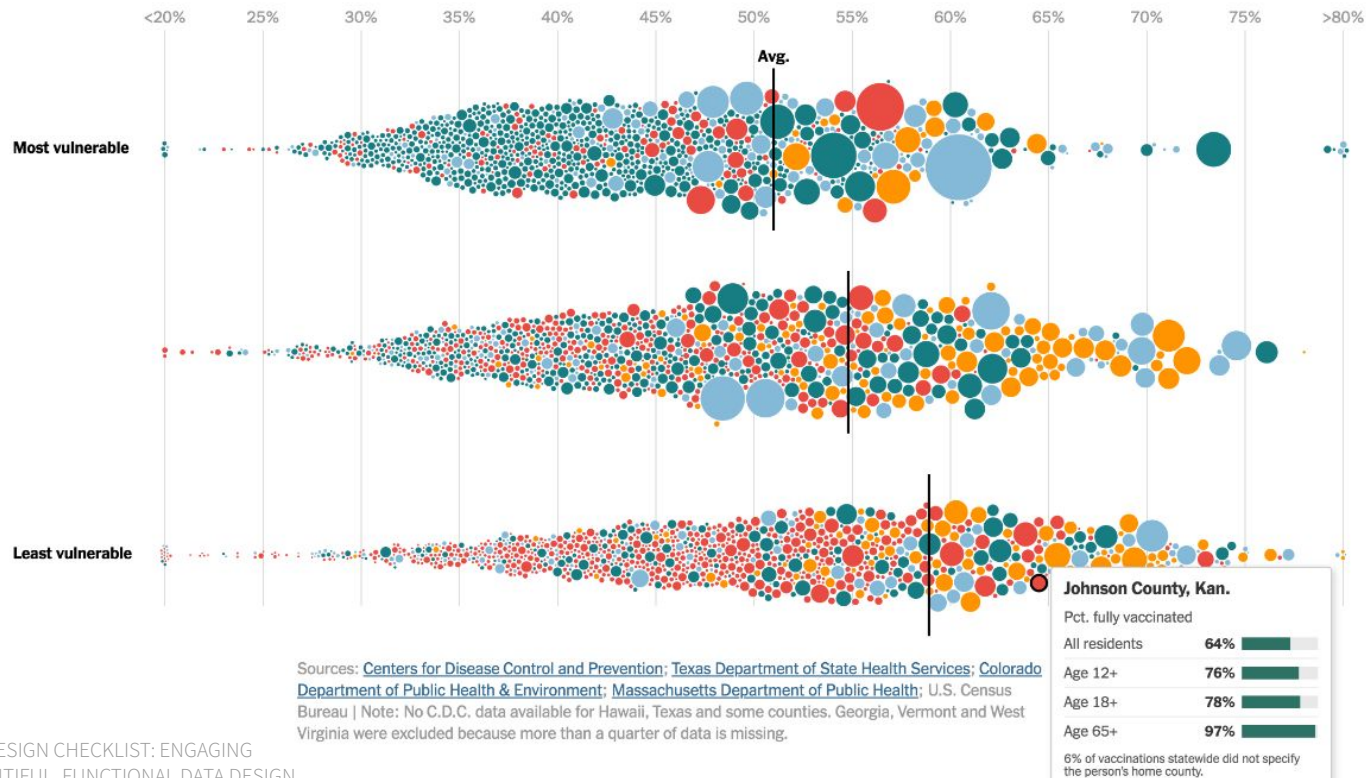
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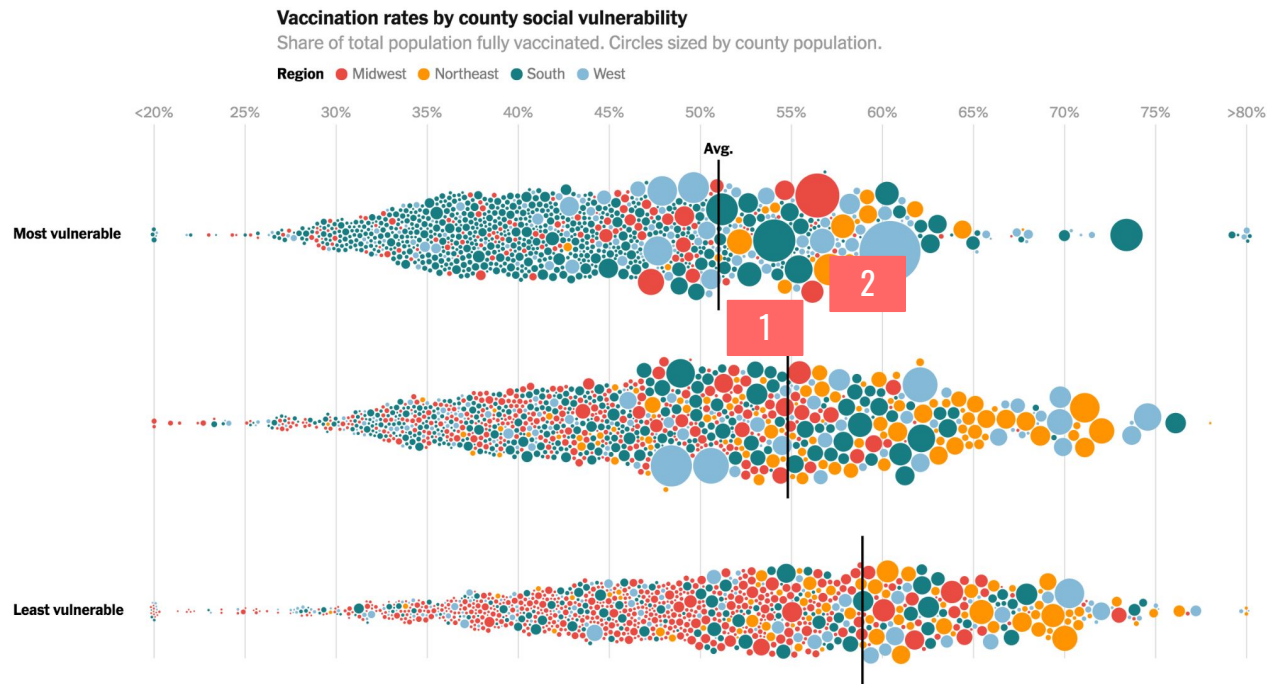


TIME FOR SOME HONESTY.

Here's how most folks **actually** read our visualizations.

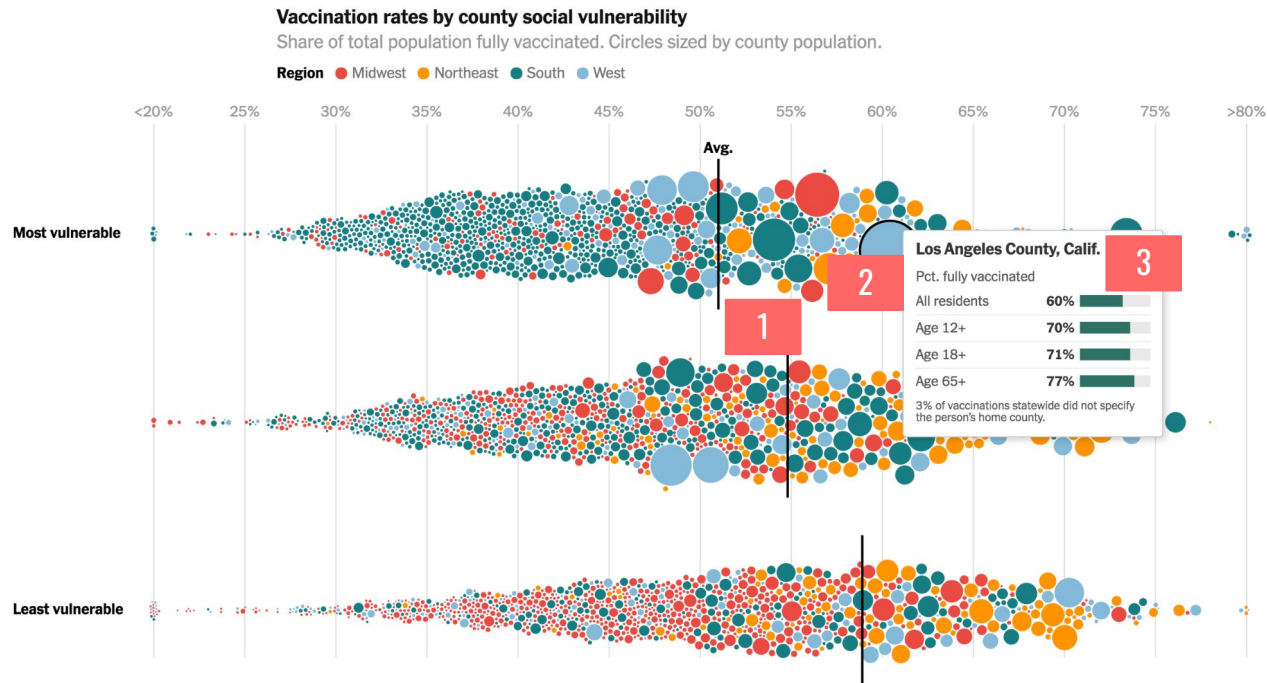


ACTUAL PATH



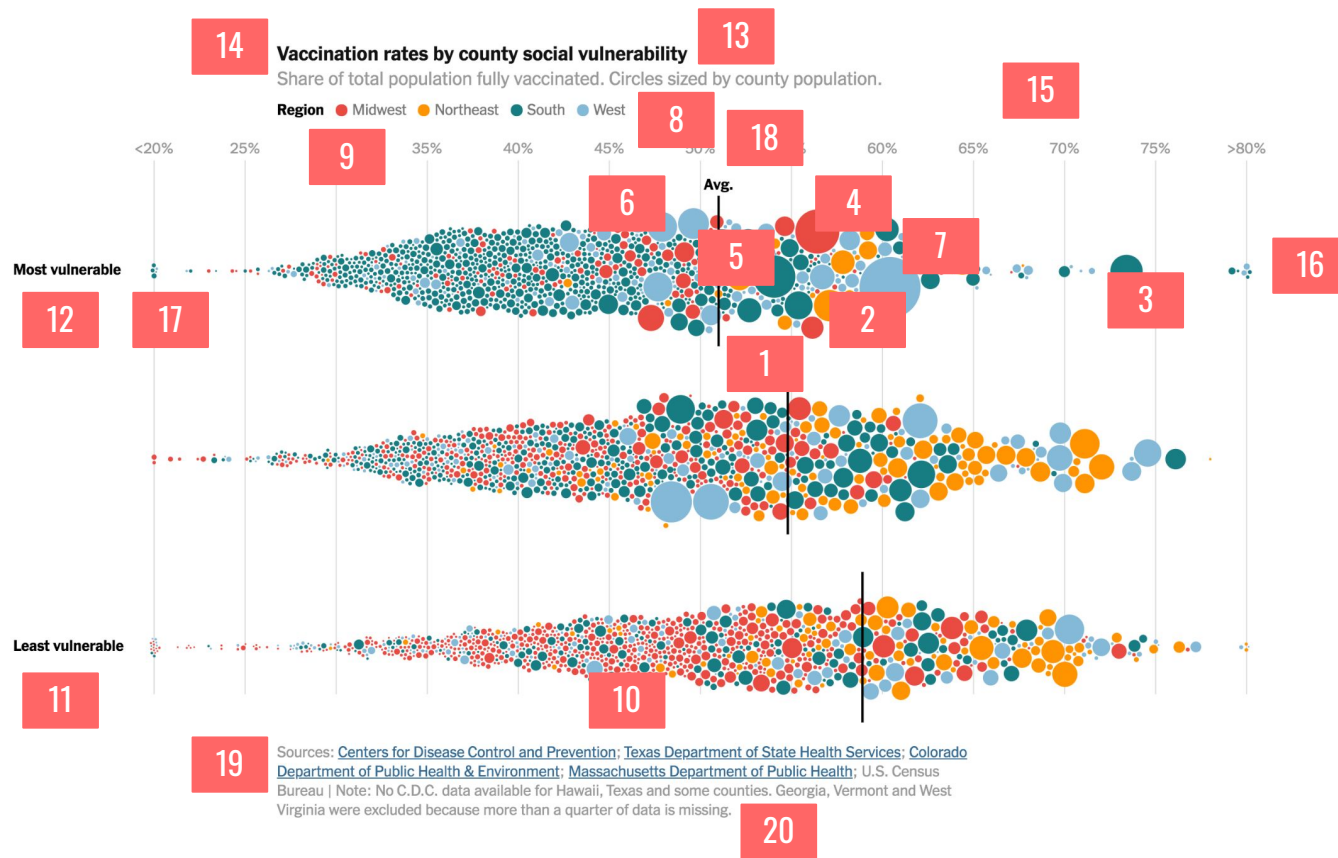
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ACTUAL PATH

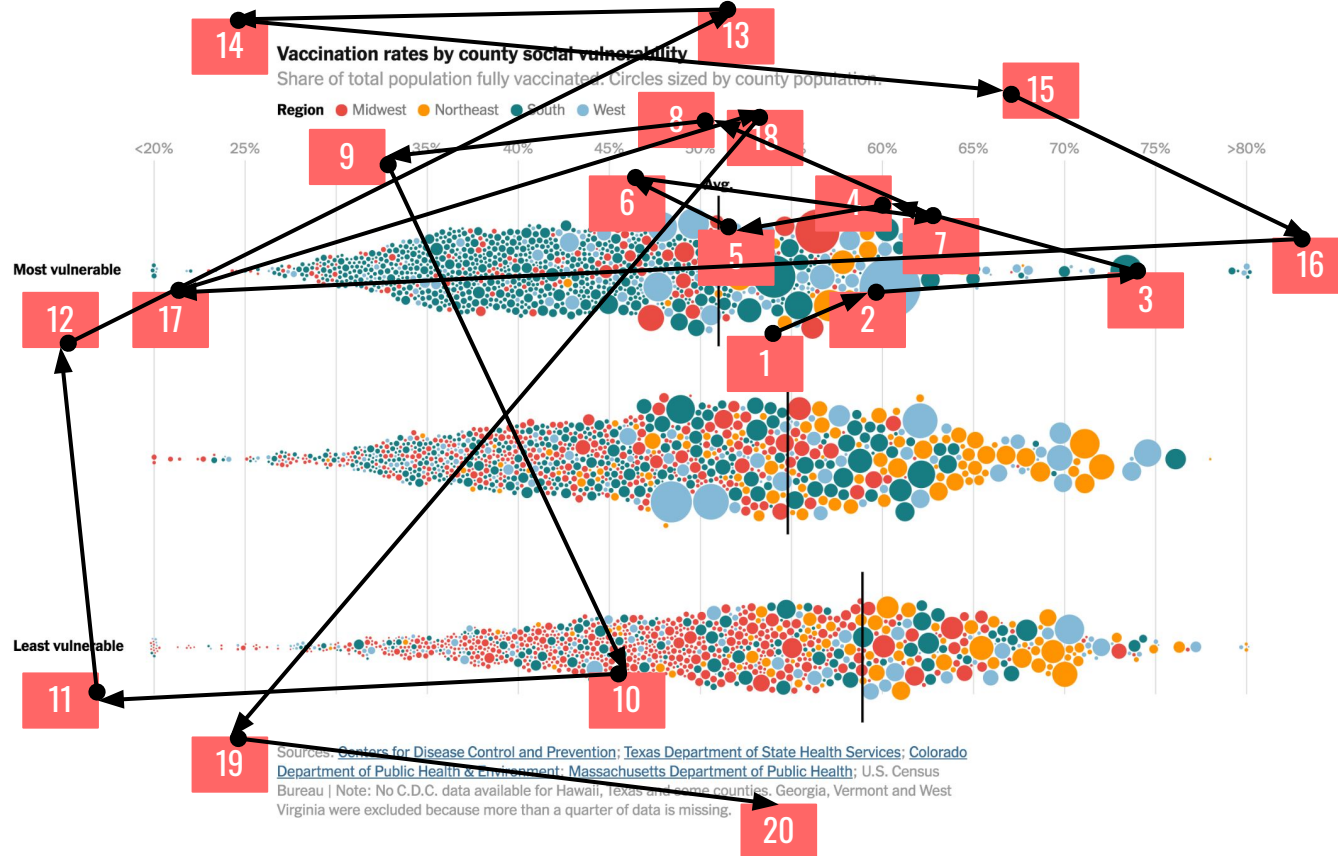


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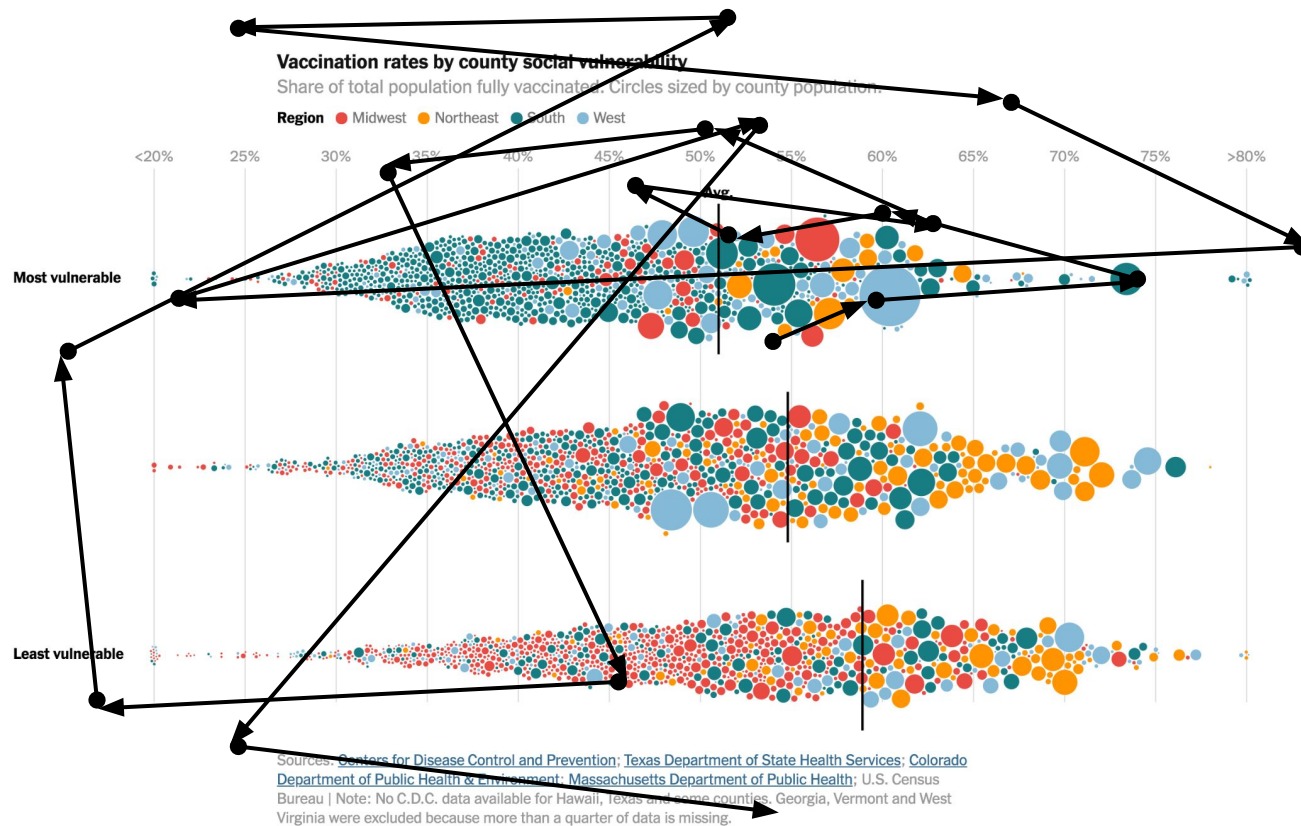
ACTUAL PATH



ACTUAL PATH



ACTUAL PATH



PINBALL MACHINES

2 Components

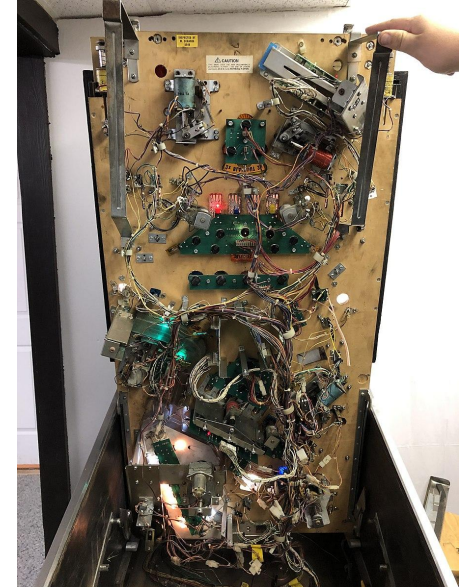
- 2.1 Cabinet
- 2.2 Backbox/Head
- 2.3 Lower Cabinet
- 2.4 Playfield
- 2.5 Plunger
- 2.6 Flippers
- 2.7 Bumpers
- 2.8 Kickers and slingshots
- 2.9 Targets
- 2.10 Holes and saucers
- 2.11 Spinners and rollovers
- 2.12 Switches, gates, and stoppers
- 2.13 Ramps
- 2.14 Toys, magnets and captive balls
- 2.15 Backglass



PINBALL MACHINES

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DESIGN DECISIONS

It's not just about making our work more beautiful.
It's about making it more **functional**.



RULE OF THUMB #1

We have to design visualizations for two types of people.

SLOW & STEADY

STEP-BY-STEP INFORMATION

The folks who read the instructions.



PINBALL

JUST IN TIME INFORMATION

And the folks who don't.



RULE OF THUMB #2

Our audience experiences our design in two ways.

EMOTION

FEELING

How does the viz make me feel?



COGNITION

THINKING

How does the visualization work?



RULE OF THUMB #2

The better our visualization makes our audience feel,
the more cognitive work our audience is willing to do.

EMOTION

FEELING

How does the viz make me feel?



COGNITION

THINKING

How does the visualization work?



RULE OF THUMB #2

Our design must earn the right to ask our audience to think.

EMOTION

FEELING

How does the viz make me feel?



COGNITION

THINKING

How does the visualization work?



4

1

3

2

Which dashboards do you want to click the most?

(rank them 1 through 4)

FIRST IMPRESSION

4	1	3	2
1	3	4	2
3	2	1	4
1	2	4	3
4	3	1	2

Which dashboards do you want to click the most?

(rank them 1 through 4)

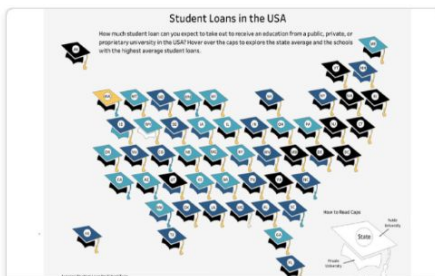
FIRST IMPRESSION



Cost of Education

Veterinary Information Network

☆ 4 👁 99,690



Student Loans in the USA

Ingibjorg (Ina) Jakobsdottir

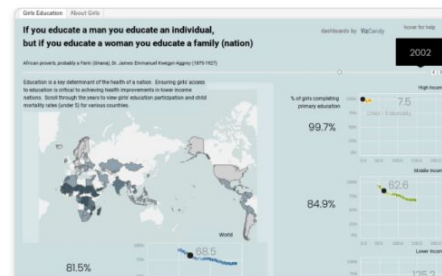
☆ 137 👁 16,913



Tableau in Education

Coleman Wagoner

☆ 57 👁 20,575



Girls Education

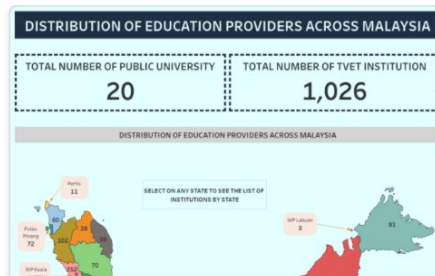
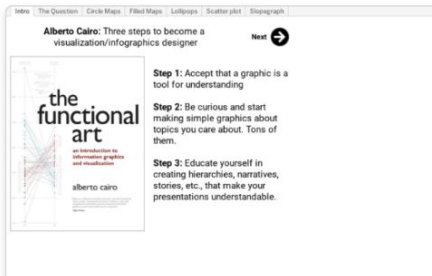
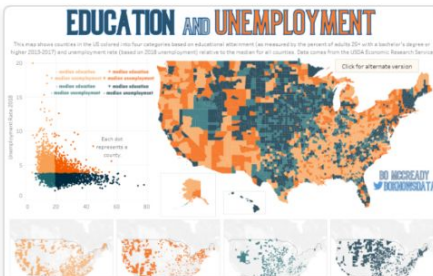
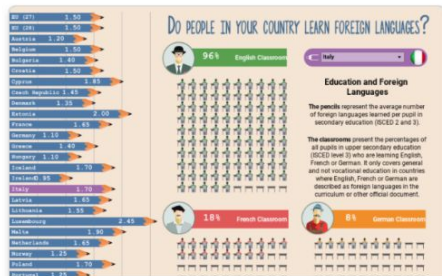
Kelly

☆ 21 👁 40,848

Which dashboards do you want to click the most?

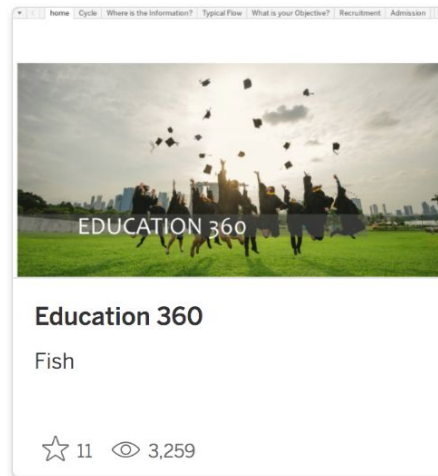
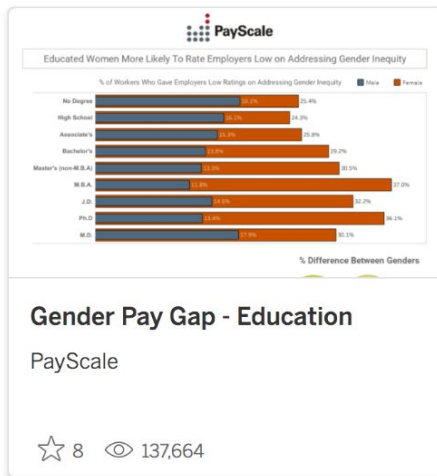
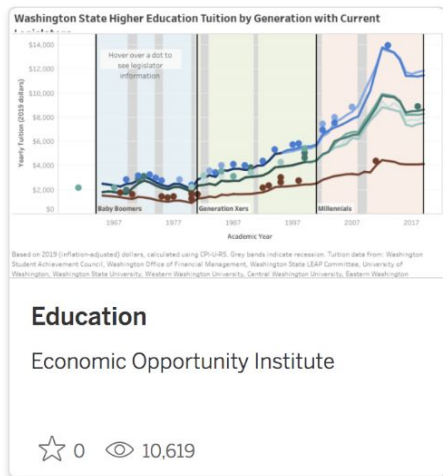
(rank them 1 through 4)

FIRST IMPRESSION



Which dashboards do you want to click the most?

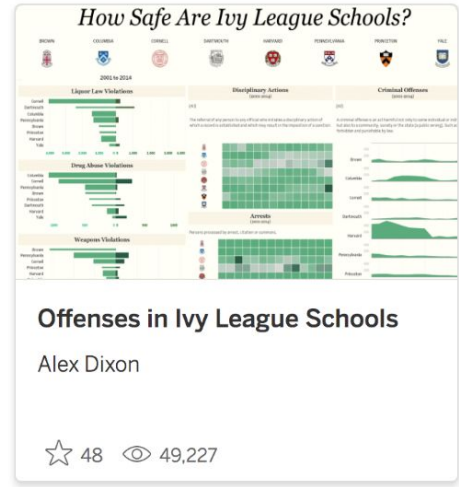
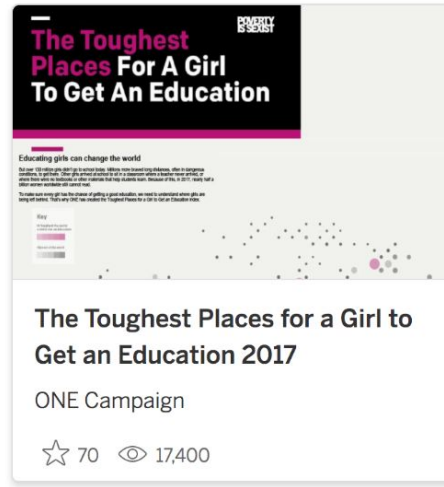
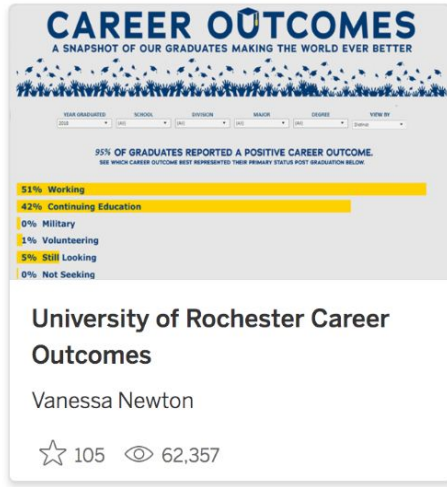
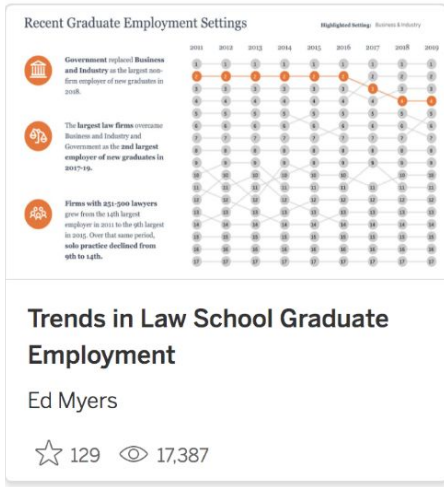
FIRST IMPRESSION



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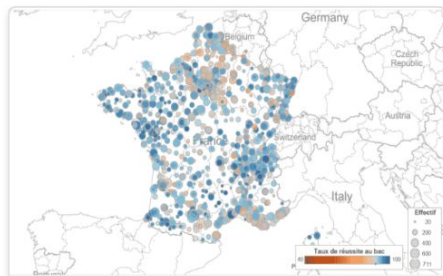
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FIRST IMPRESSION



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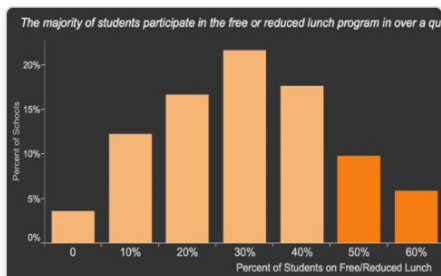
FIRST IMPRESSION



French High-School Outcome Indicators 2014

Yvan Fornes

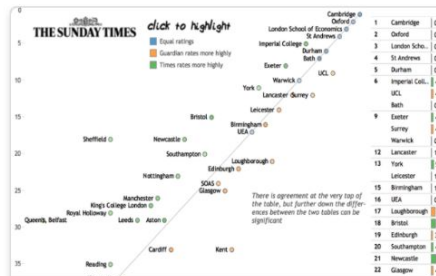
☆ 13 👁 11,592



Poverty and School Performance

Stephen Wagner

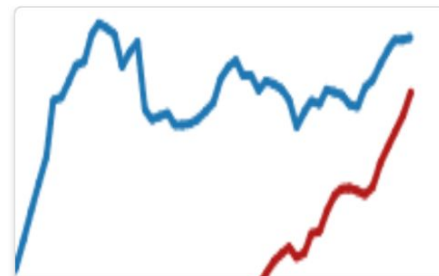
☆ 24 👁 22,846



University League Table 2014

Peter Gilks

☆ 2 👁 22,624



Enrollment at Cornell University Since 1868

Institutional Research and Planning

☆ 13 👁 227,696

Which dashboards do you want to click the most?

(rank them 1 through 4)

FIRST IMPRESSION

EMOTION

How does the visualization feel?

NEGATIVE



WE PULL BACK

BUSY

overwhelming
chaotic
confusing
loud
distracting
disorienting
lopsided

DATED

dense
heavy
crowded
washed out
cutesy
tonedeaf
offensive

BORING

pointless
superficial
fluffy
time consuming
repetitive
generic
stale

STREAMLINED

intuitive
digestible
approachable
striking
intentional
familiar
balanced

MODERN

curated
clean
light
crisp
professional
thoughtful
inclusive

ENGAGING

interesting
addictive
substantial
meaningful
memorable
rewarding
unique

POSITIVE



WE LEAN IN

THE DATA VISUALIZATION DESIGN CHECKLIST

CLEAN

What can you erase?

CONSISTENT

What can you standardize?

INTUITIVE

What can you make obvious?



INK

- Color
- Weight
- Lines
- Shading



GUIDEPOSTS

- Axes
- Embedded Text
- Titles
- Keys



WORDS

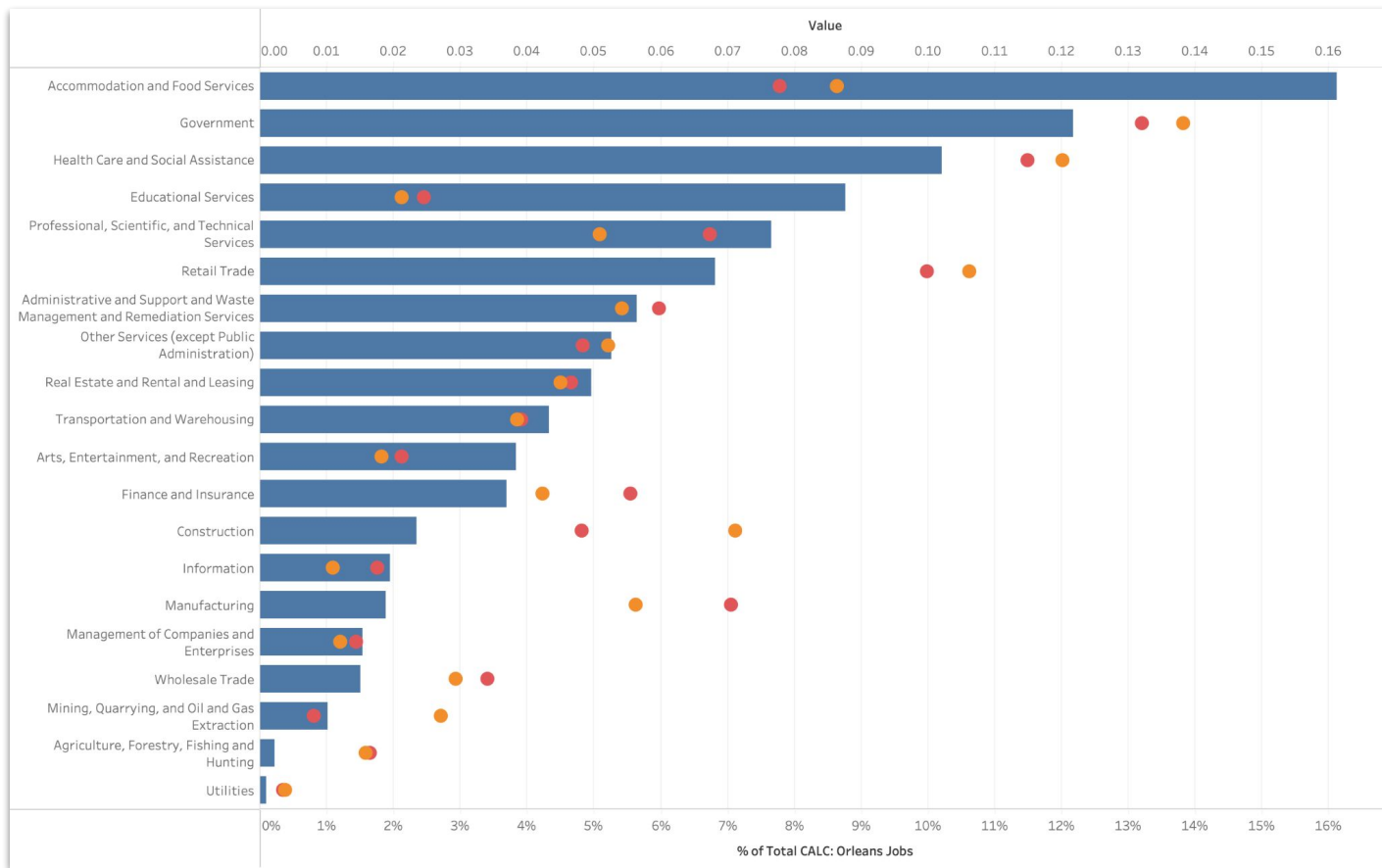
- Font
- Size
- Alignment
- Clarity



LAYOUT

- Path
- Zones
- Negative Space
- Platform

BEFORE

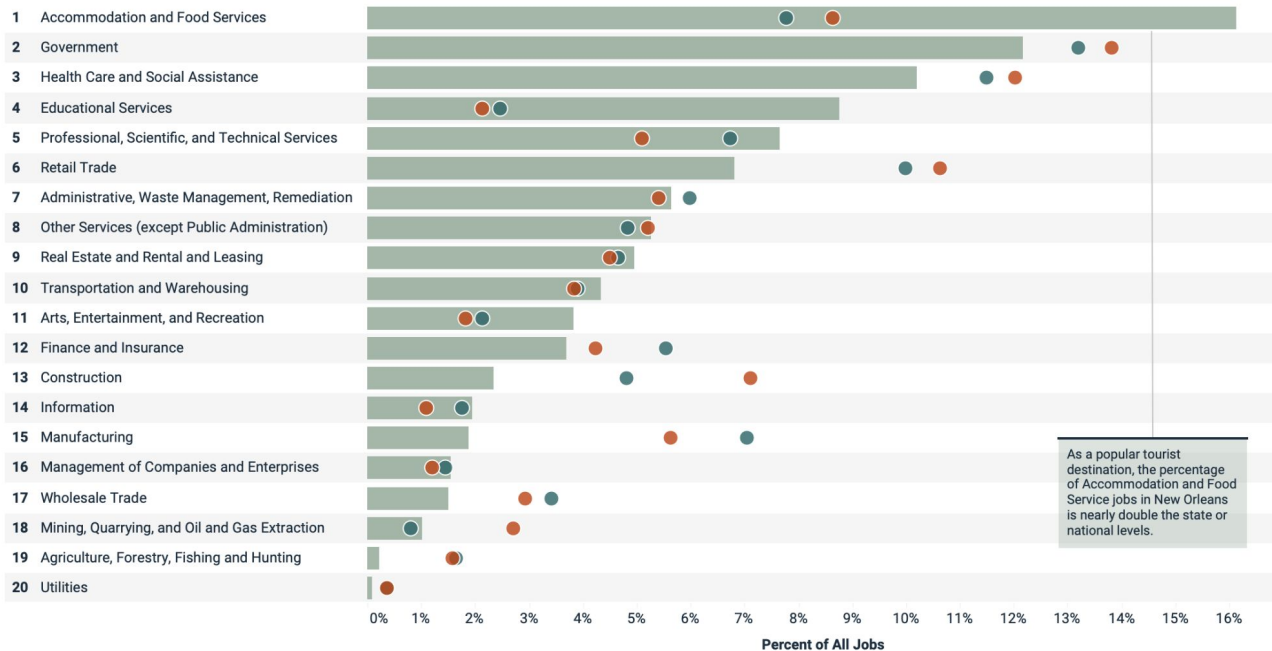




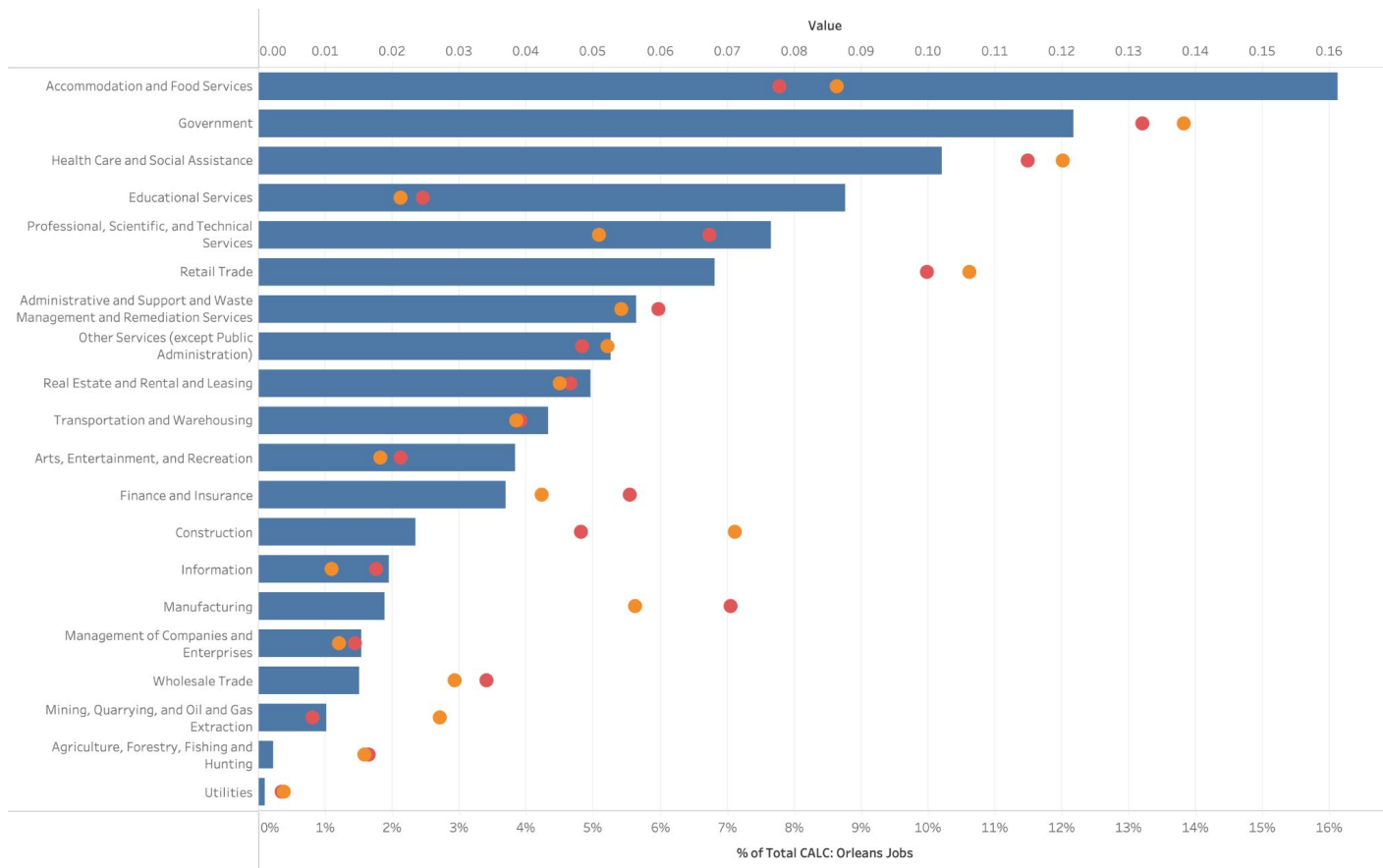
THE COWEN INSTITUTE
hover over chart to learn more

How do the major industries in New Orleans compare with Louisiana and the United States?

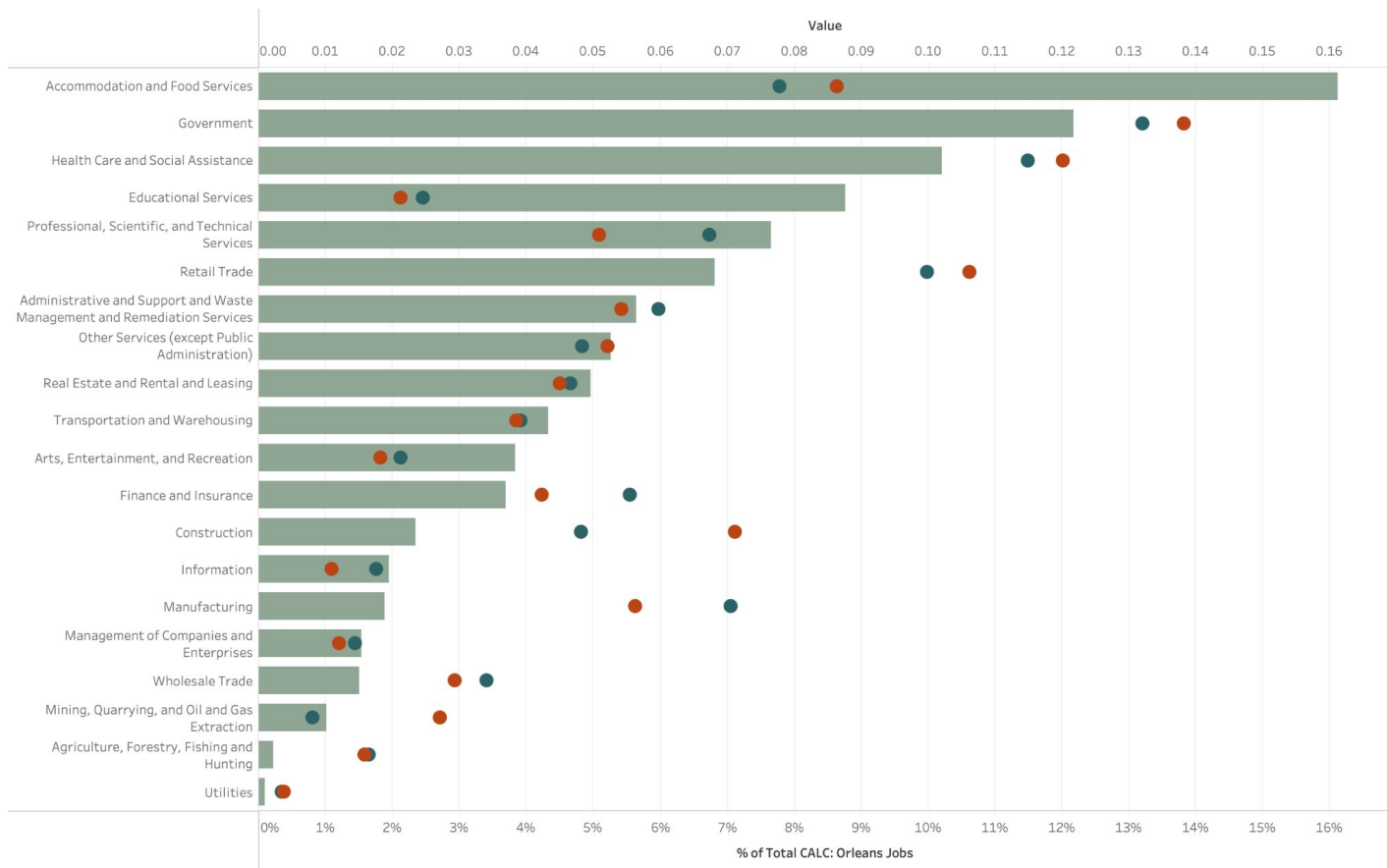
HOW TO READ THIS CHART The green bars represent 100% of the jobs in New Orleans in 2017, broken down by industry. The orange and blue dots provide the same percentage distribution for the broader state economy in Louisiana and the United States' economy as a whole. Hover over the chart to learn more.



BEFORE

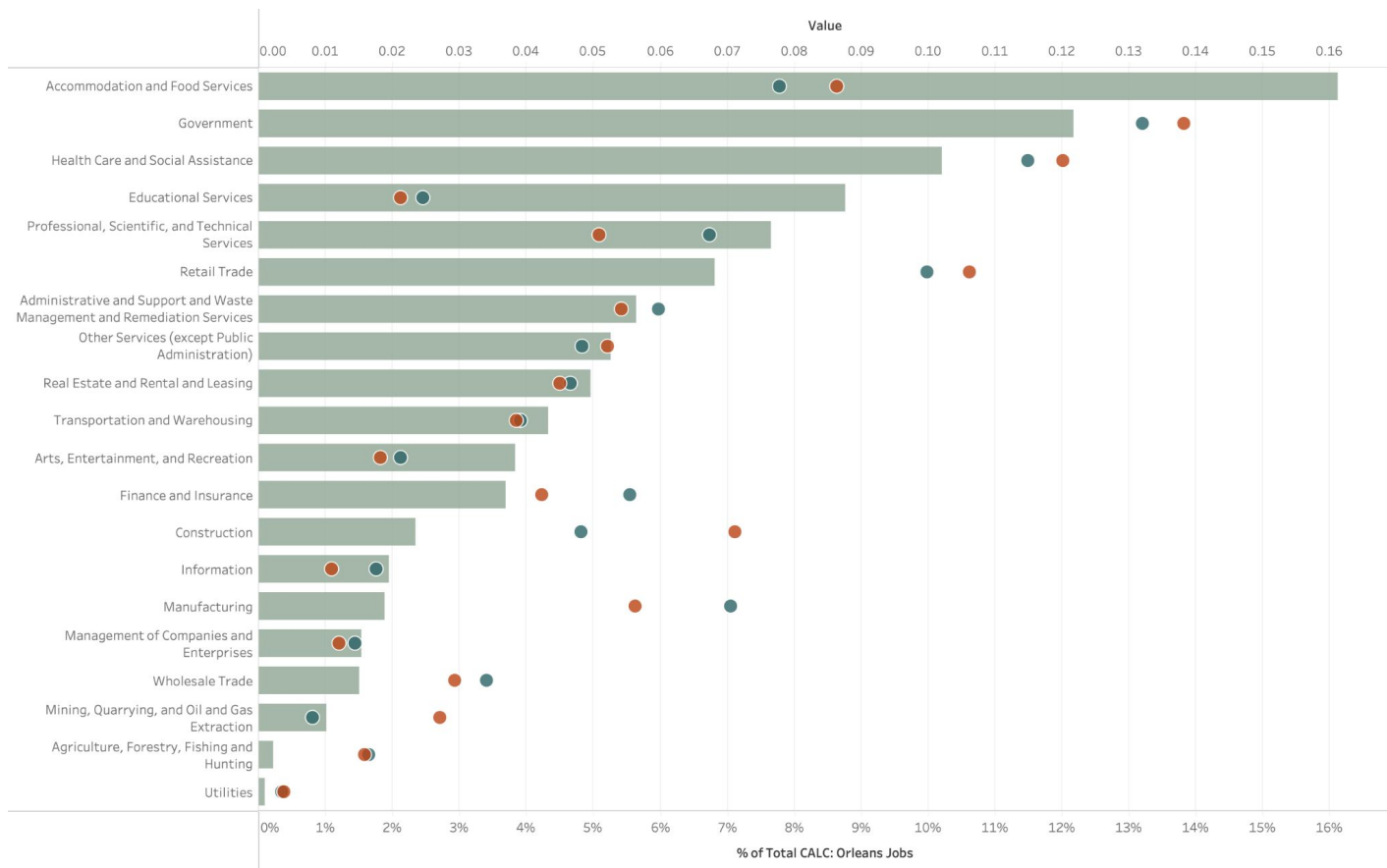


COLOR

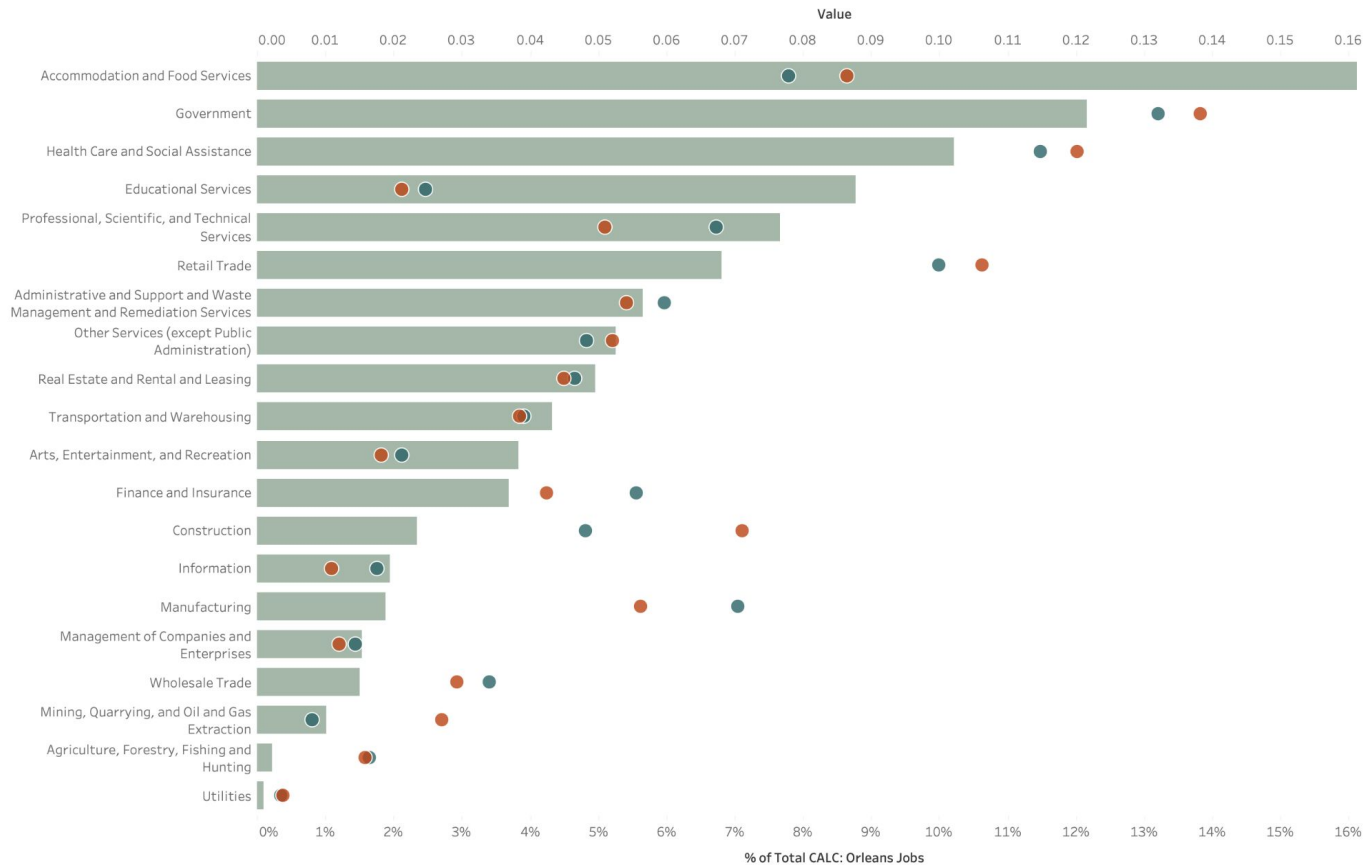


INK

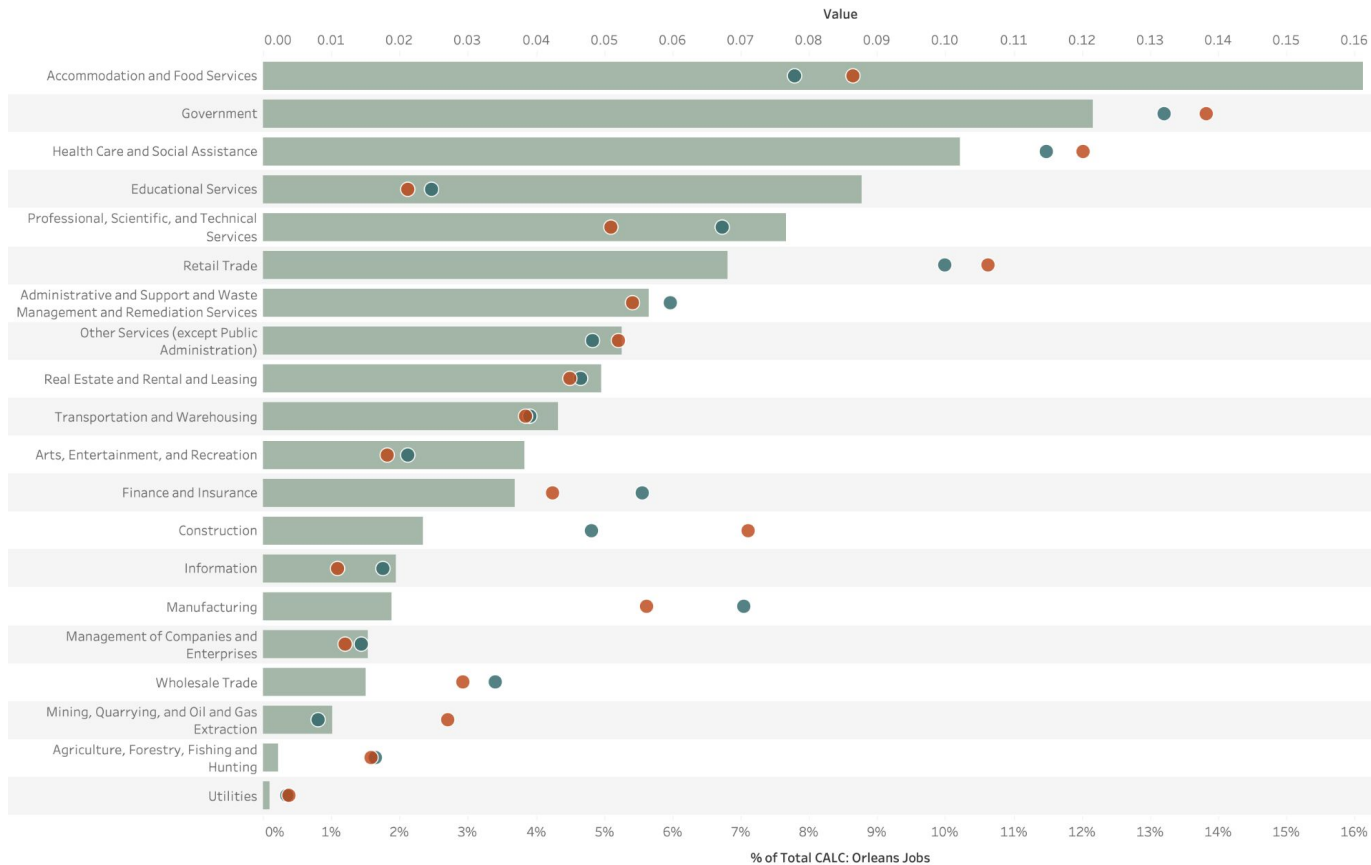
WEIGHT



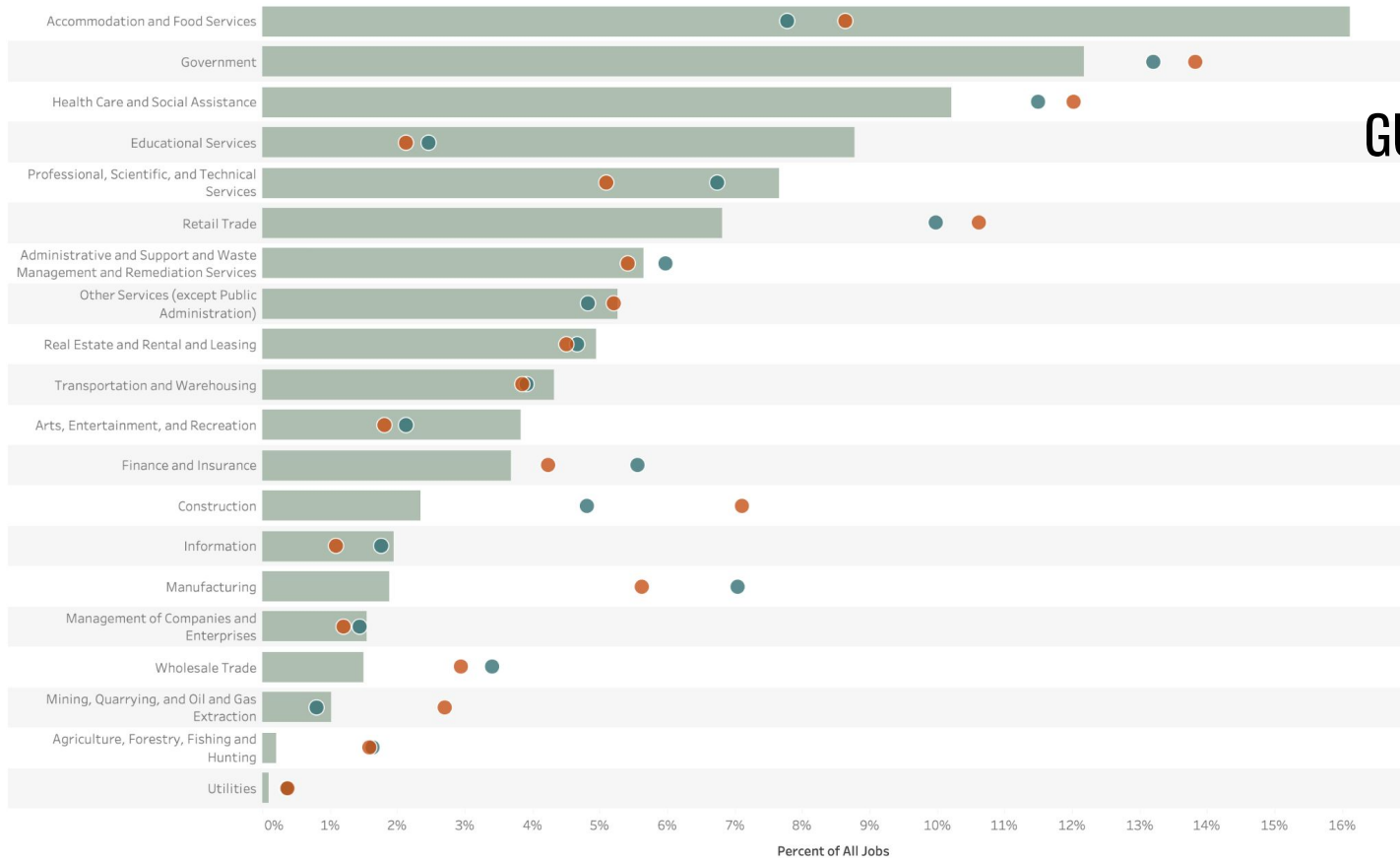
INK

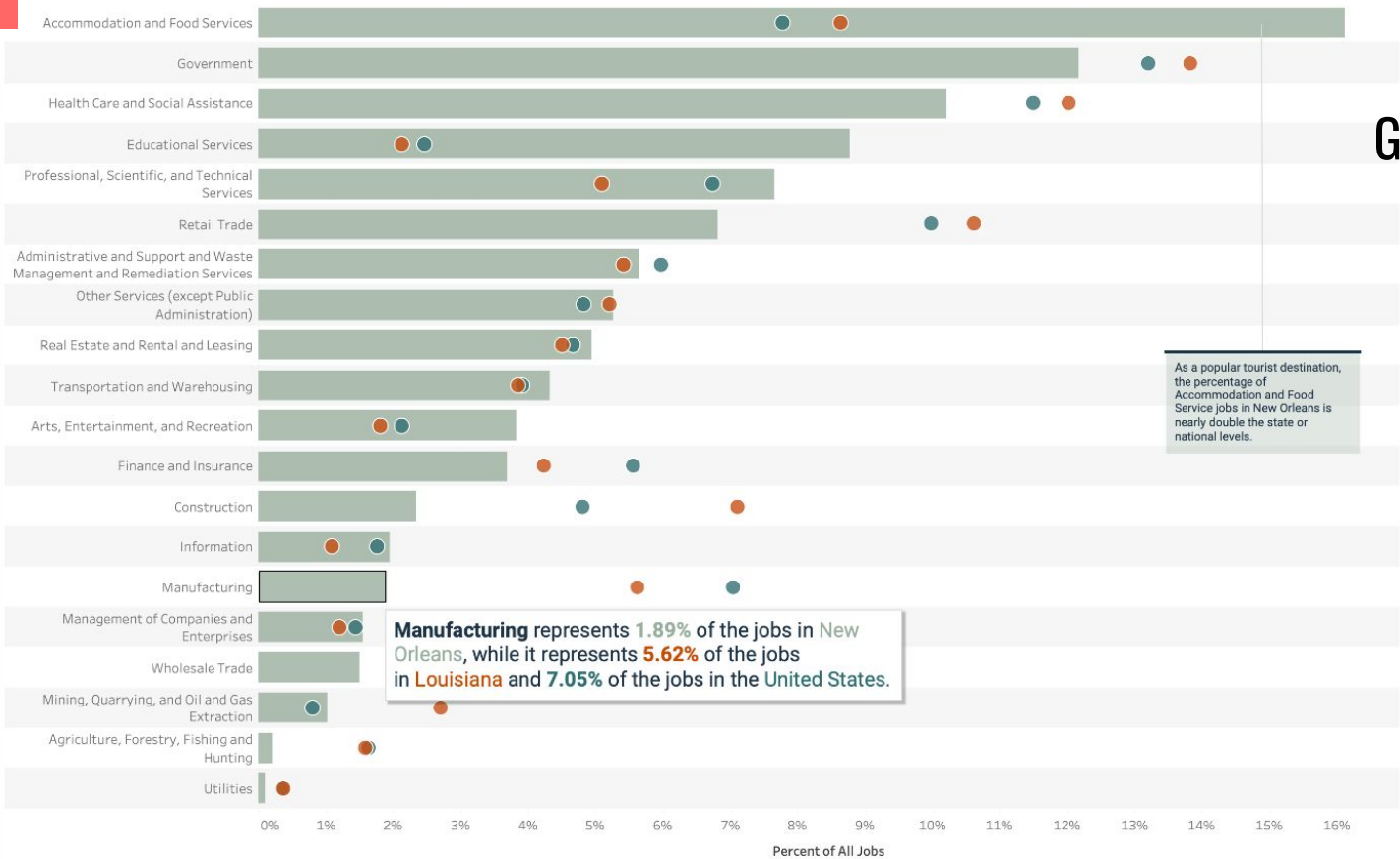


SHADING



INK

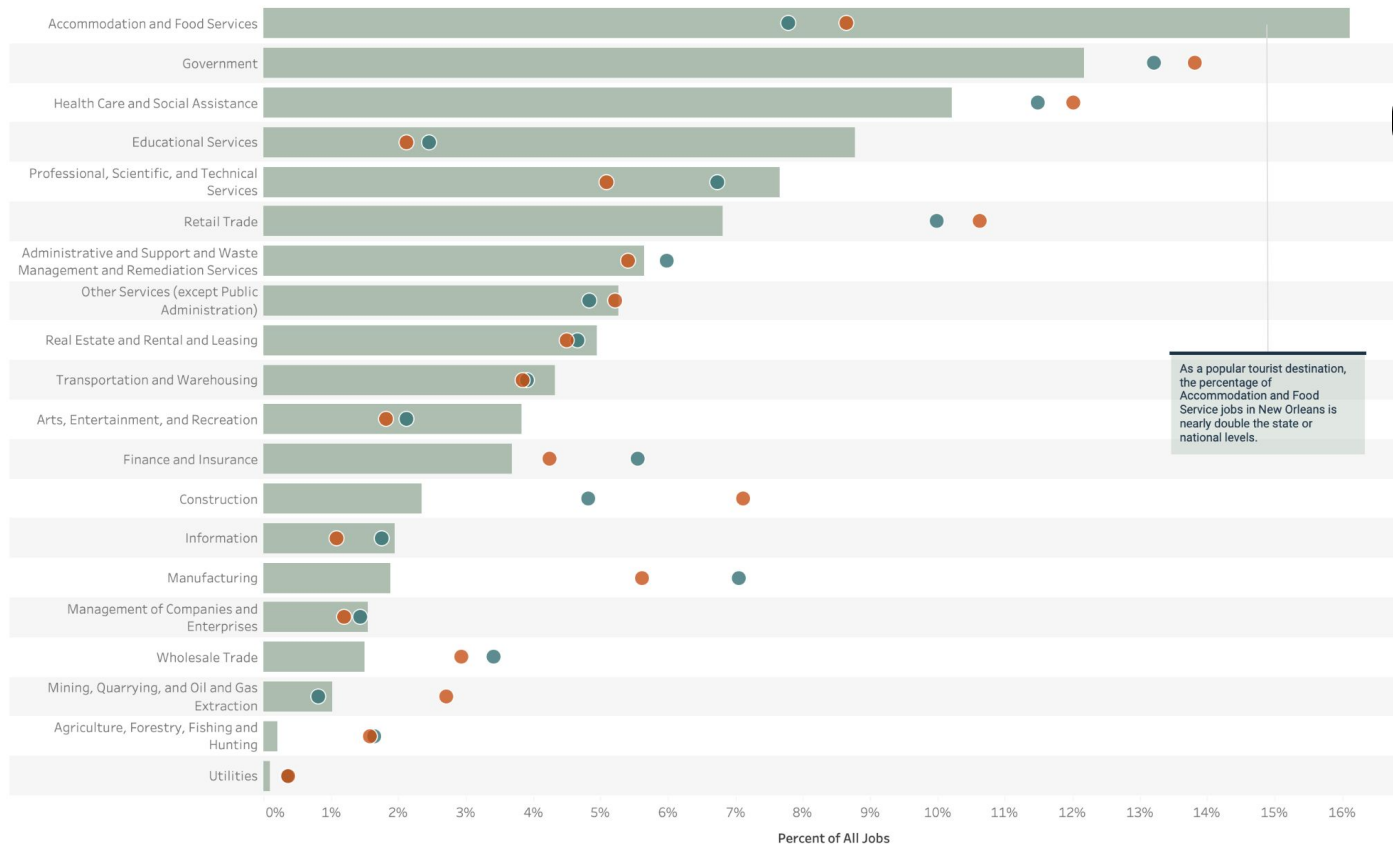




How do the major industries in New Orleans compare with Louisiana and the United States?

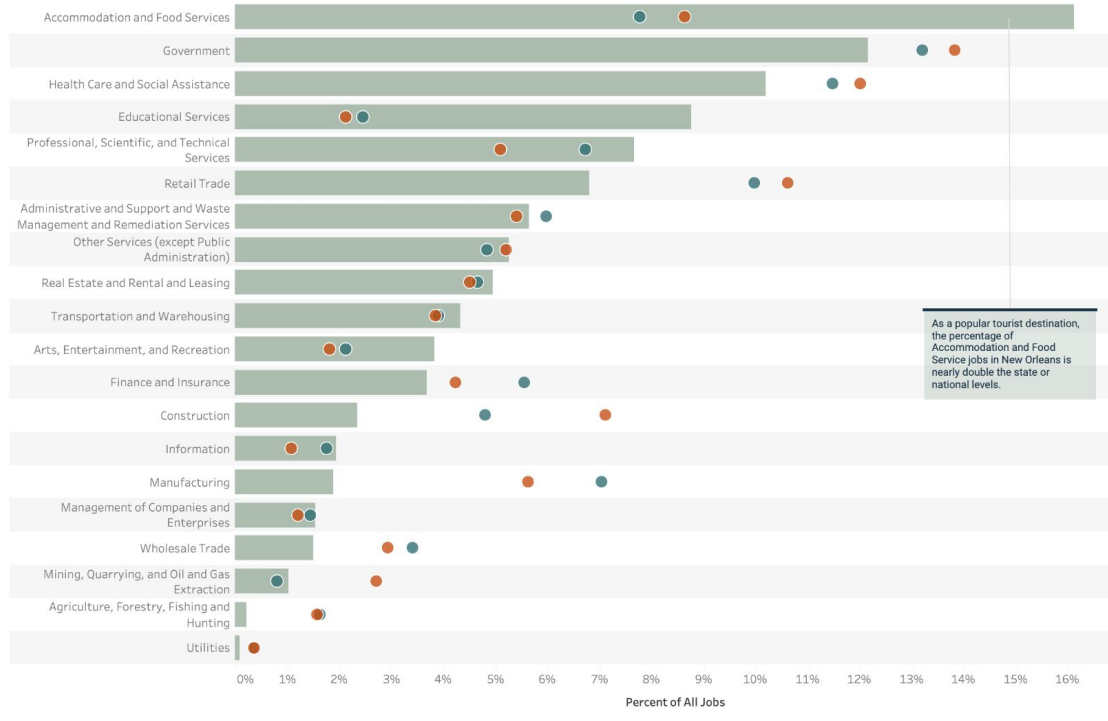


GUIDEPOSTS





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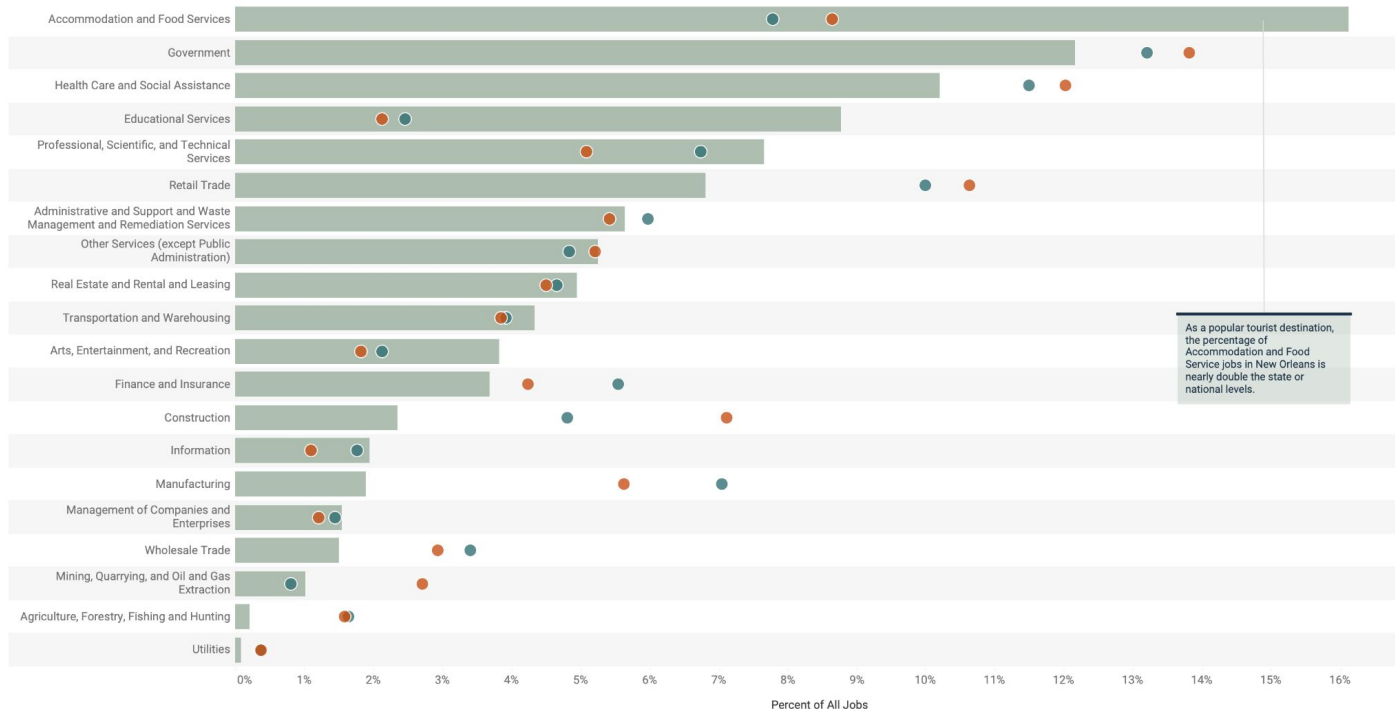


GUIDEPOSTS



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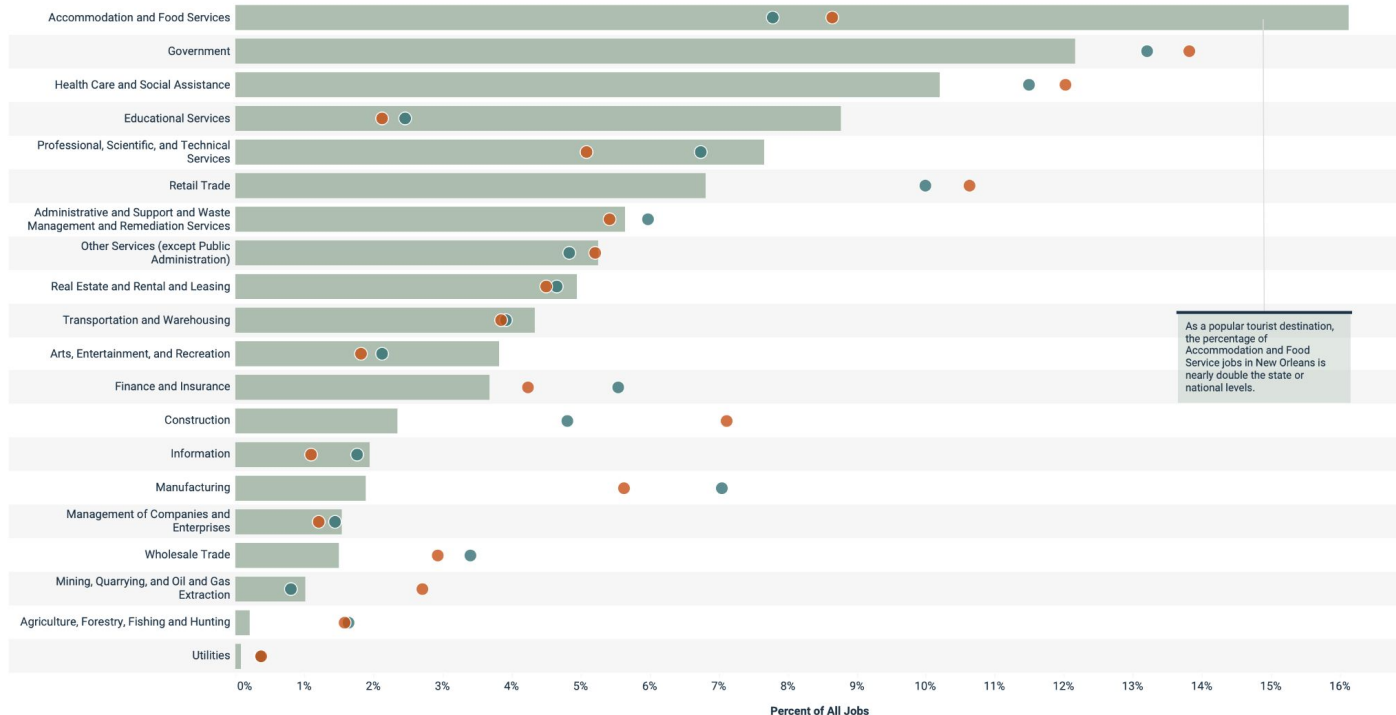
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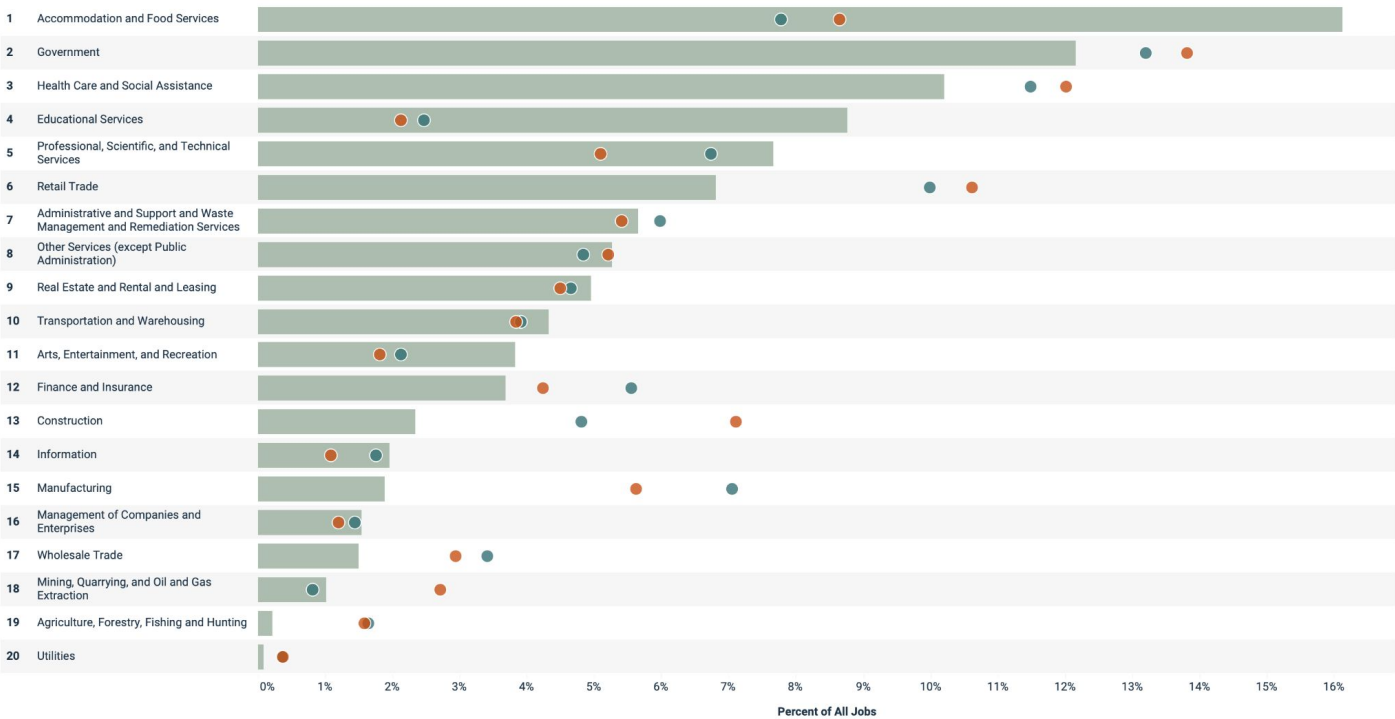
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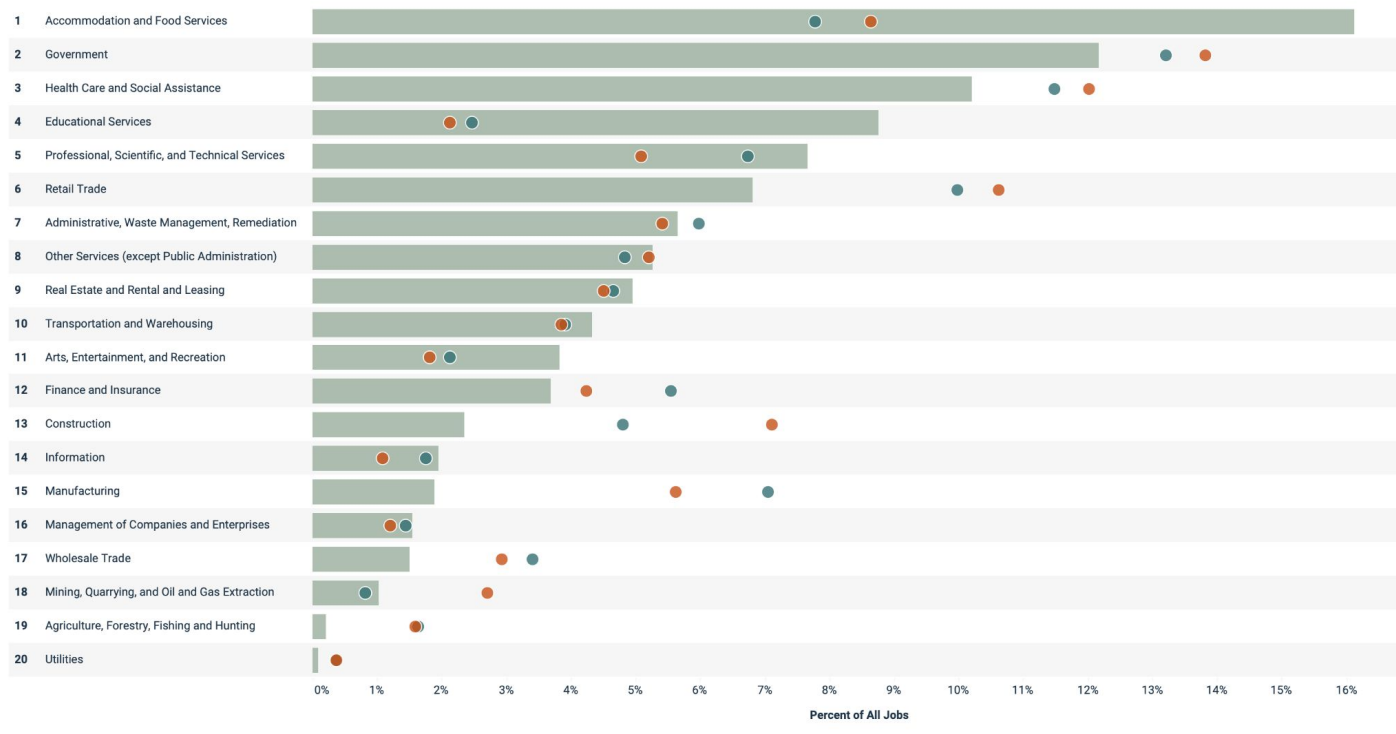
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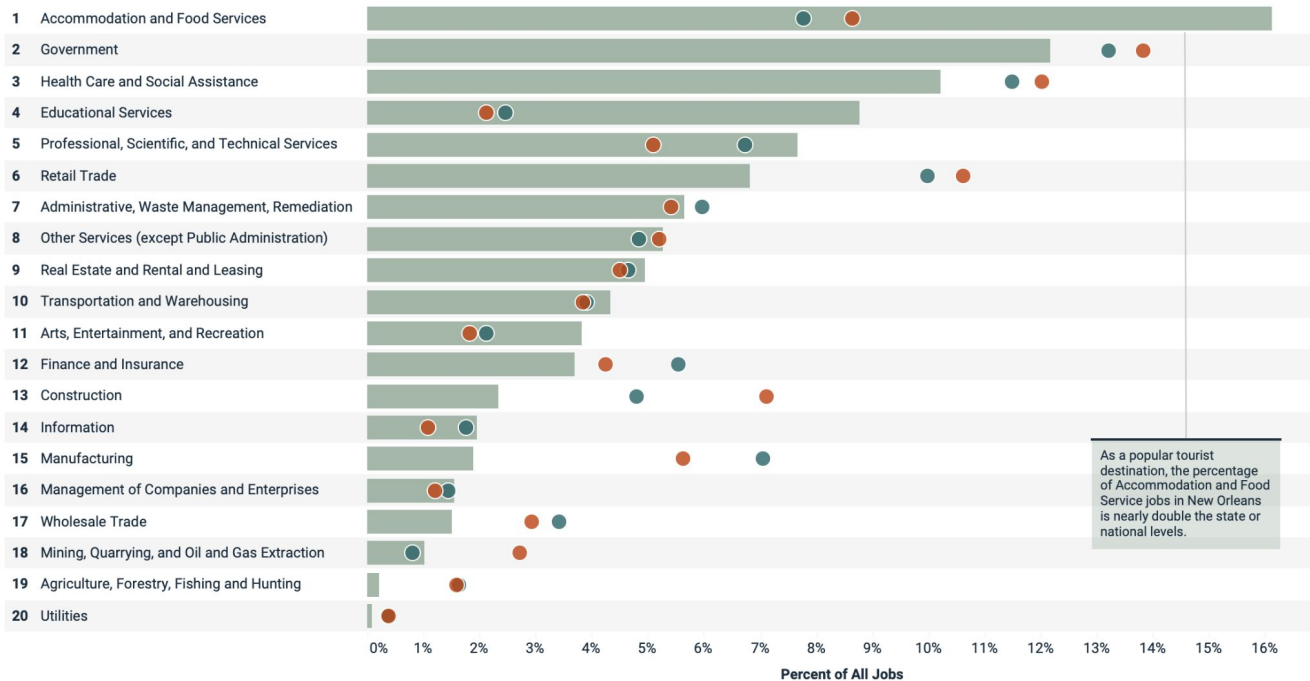




THE COWEN INSTITUTE
hover over chart to learn more

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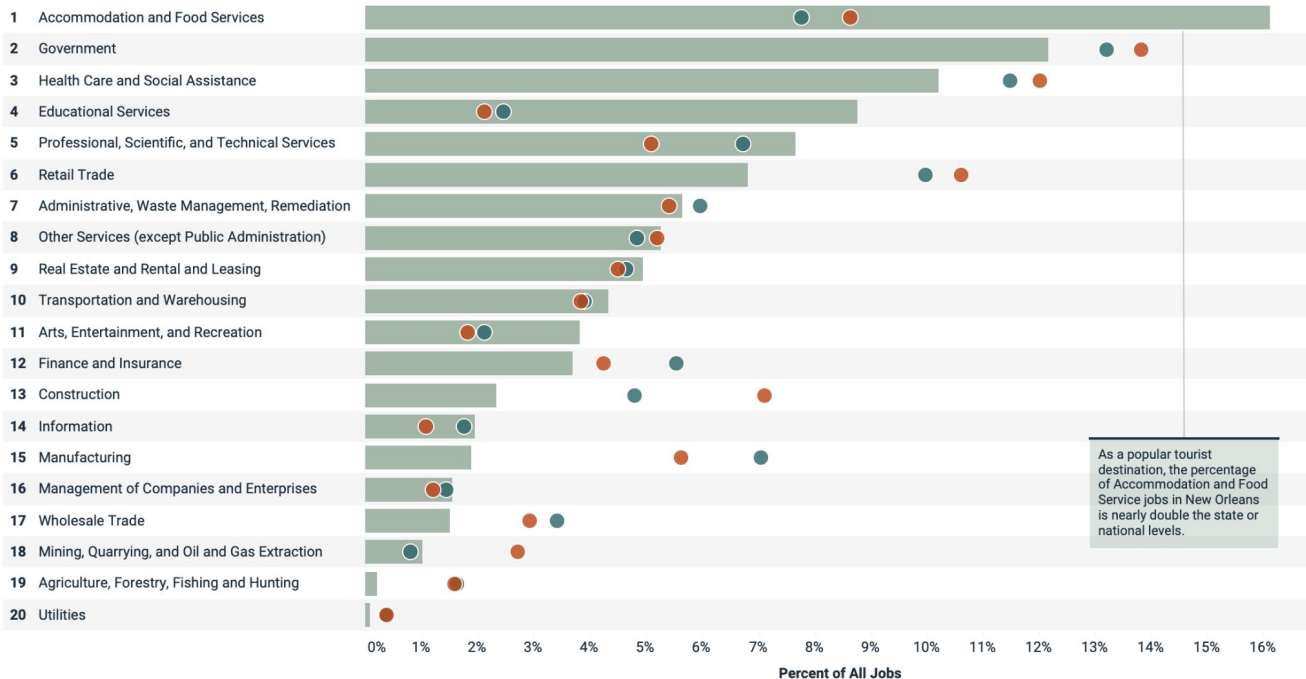
LAYOUT



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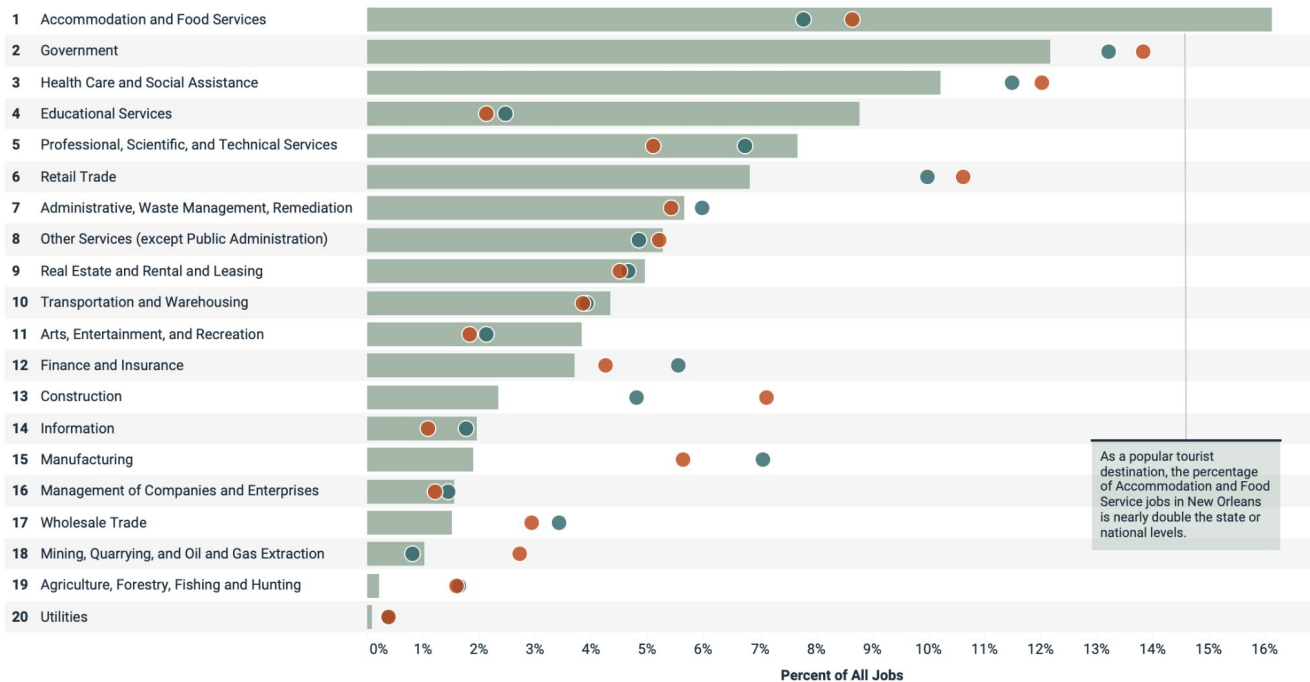
LAYOUT



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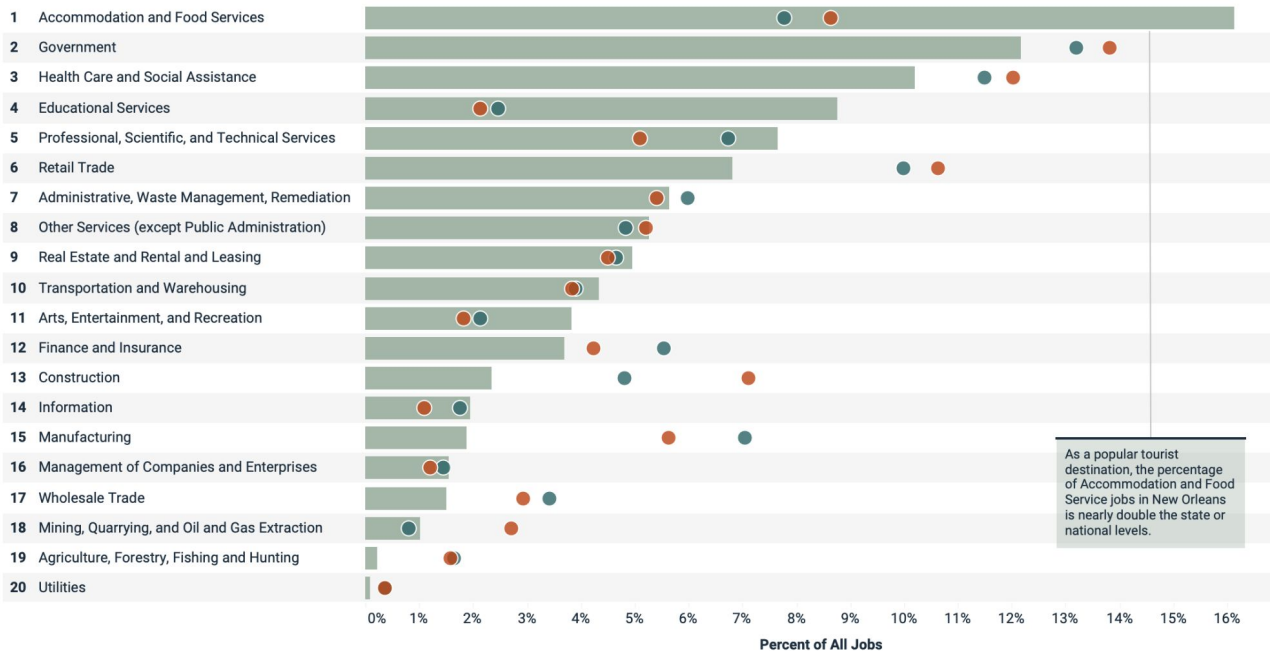




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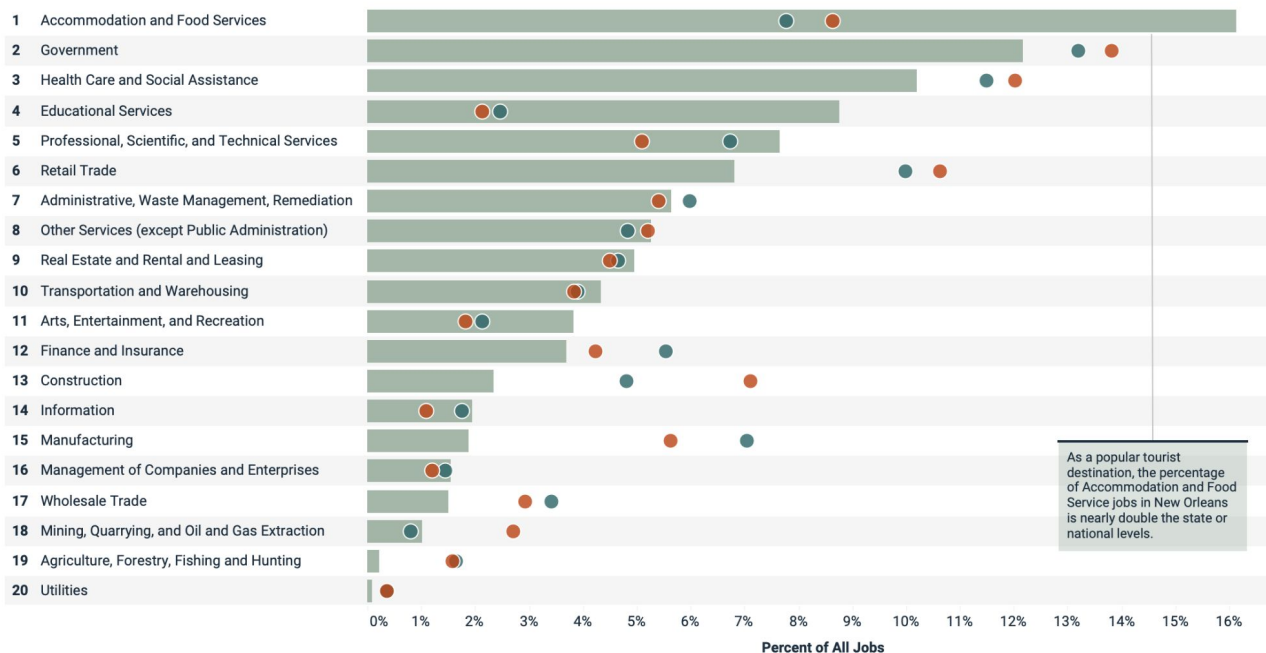




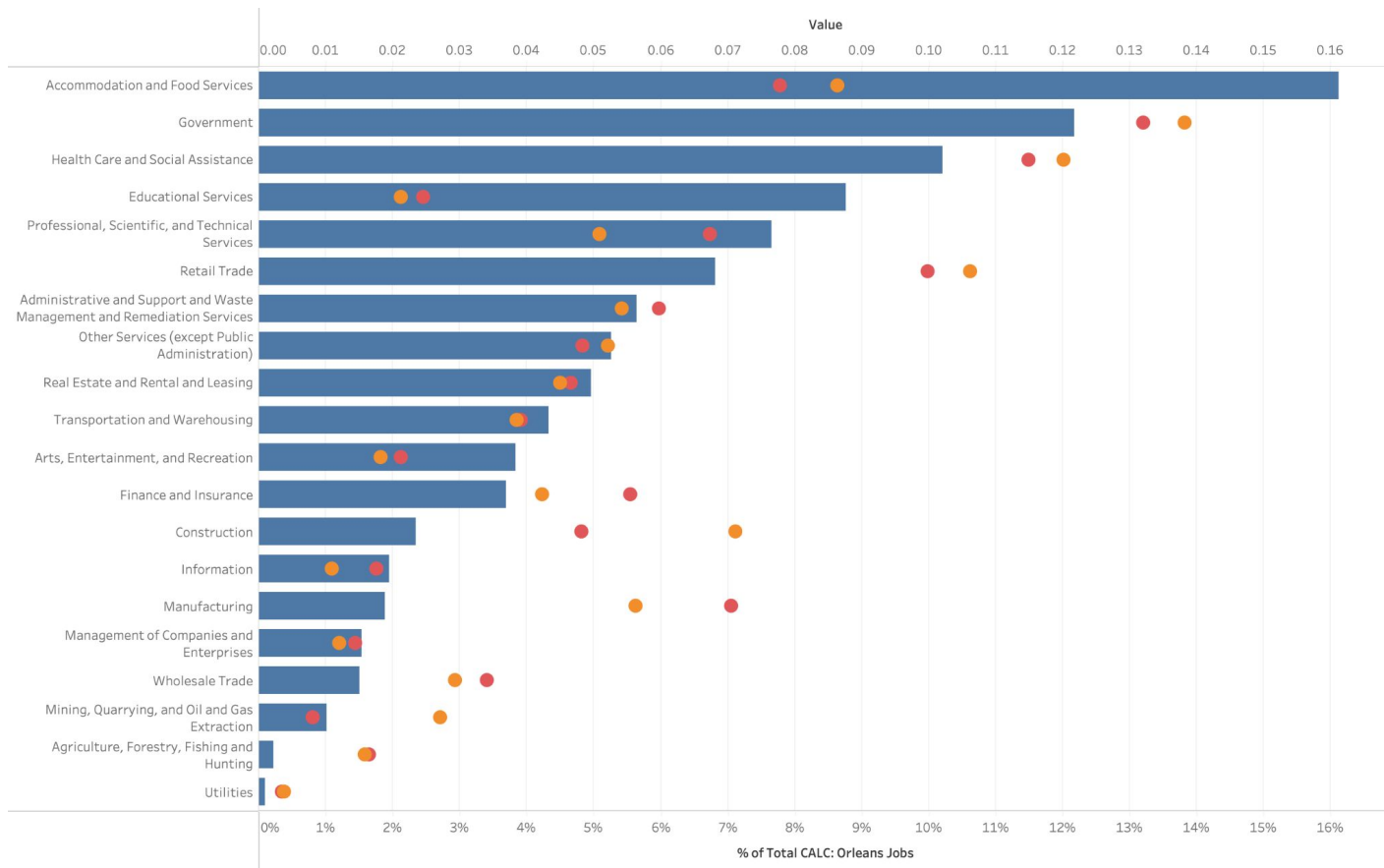
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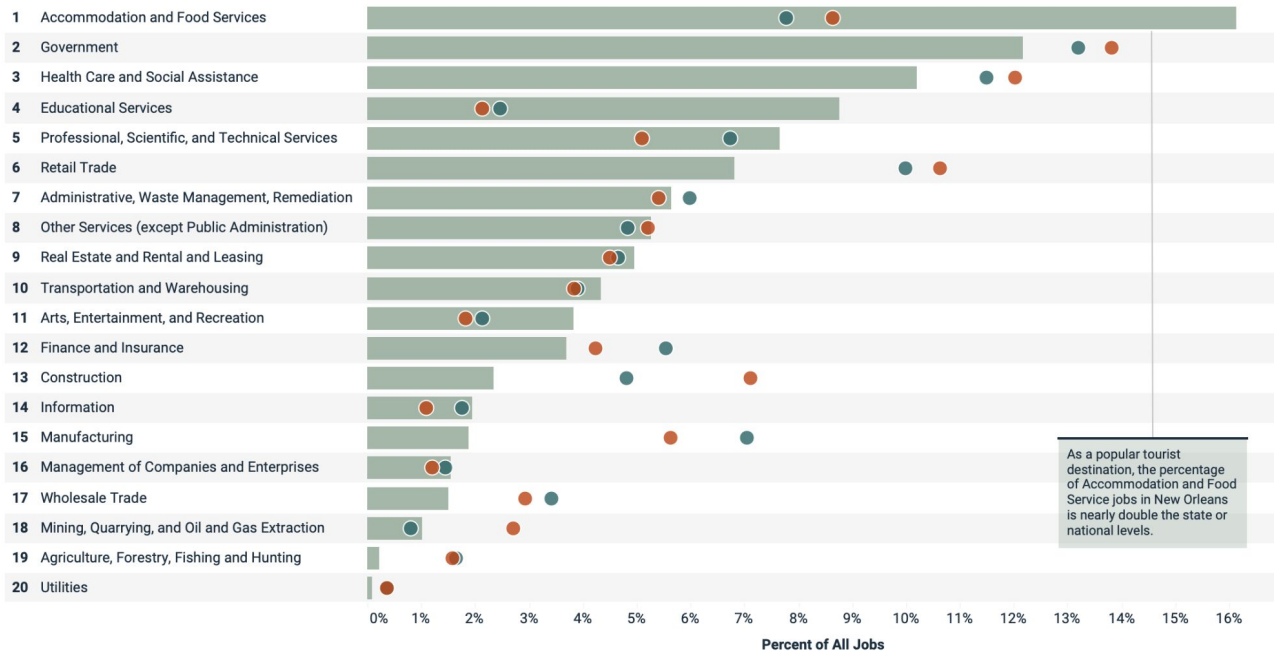




THE COWEN INSTITUTE
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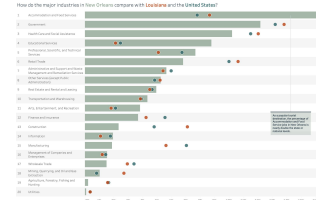
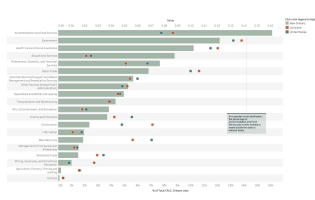
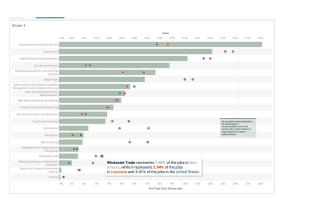
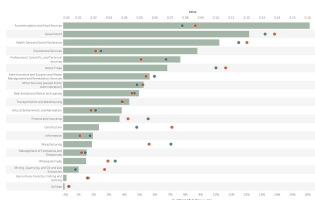
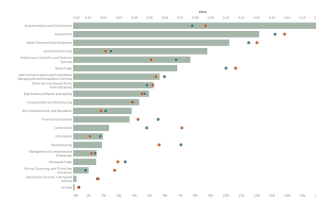
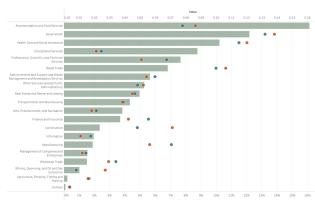
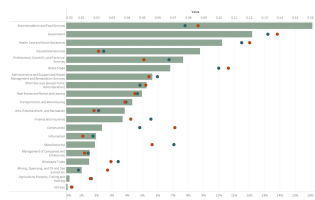
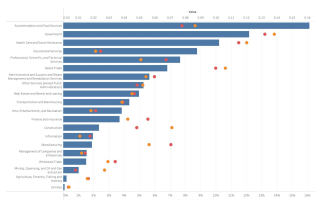
How do the major industries in New Orleans compare with Louisiana and the United States?

HOW TO READ THIS CHART The green bars represent 100% of the jobs in New Orleans in 2017, broken down by industry. The orange and blue dots provide the same percentage distribution for the broader state economy in Louisiana and the United States' economy as a whole. Hover over the chart to learn more.



TWO SHORTCUTS WE MAKE FROM A DISTANCE

COLOR
SETS
THE
TONE

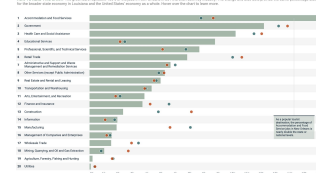
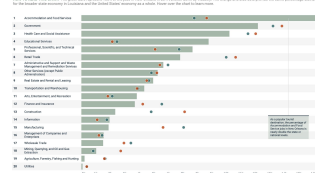
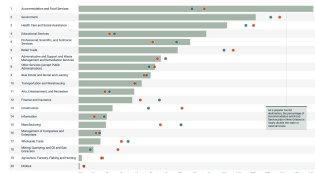
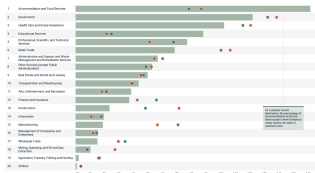


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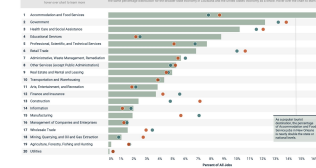
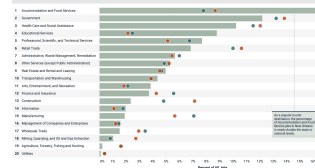
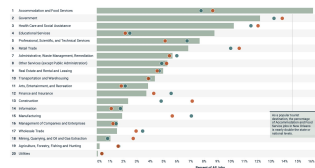
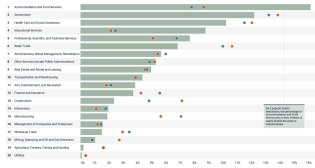


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