

Parametrized Nice Reports with Quarto and PDF

UseR 2024

Thomas Vroylandt, Kantiles

whoami

- Founded a consultancy business **Kantiles**



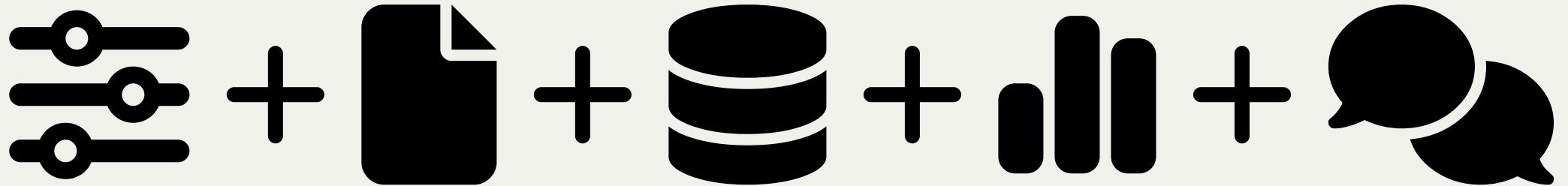
- Also work with **R for the Rest of Us**
- Creator of the **pagedreport** package 
- Produced 1000+ parametrized reports

Contact me: thomas@kantiles.com 

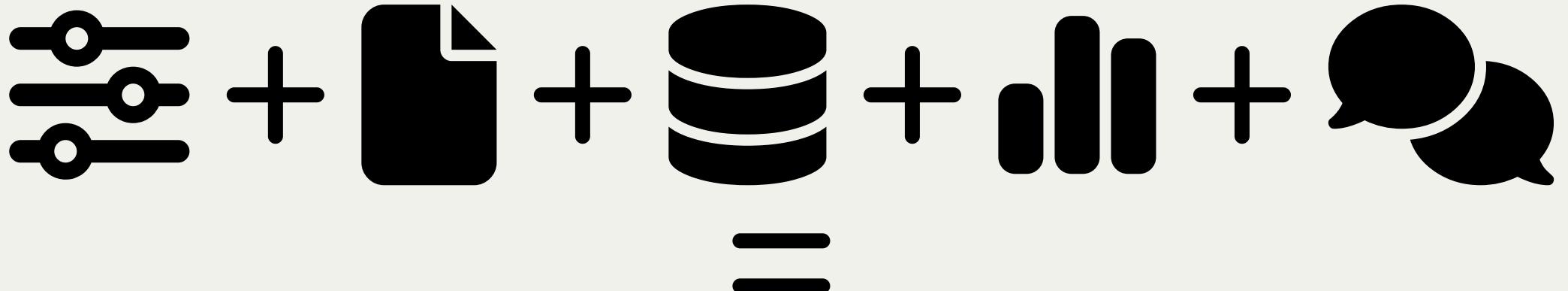
Parametrized Reporting ?



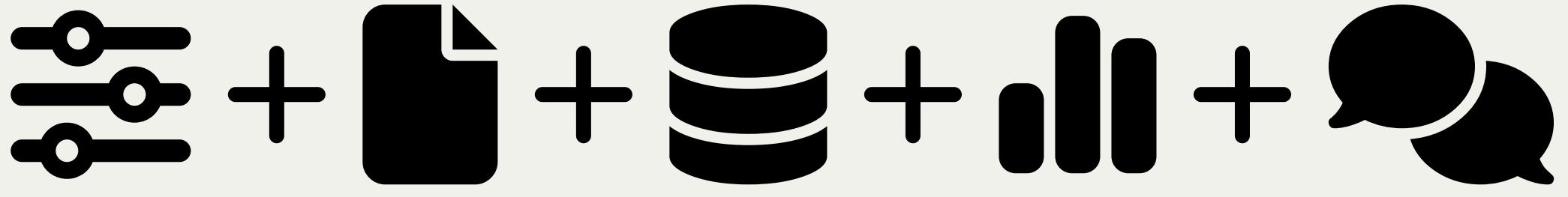
From one report many



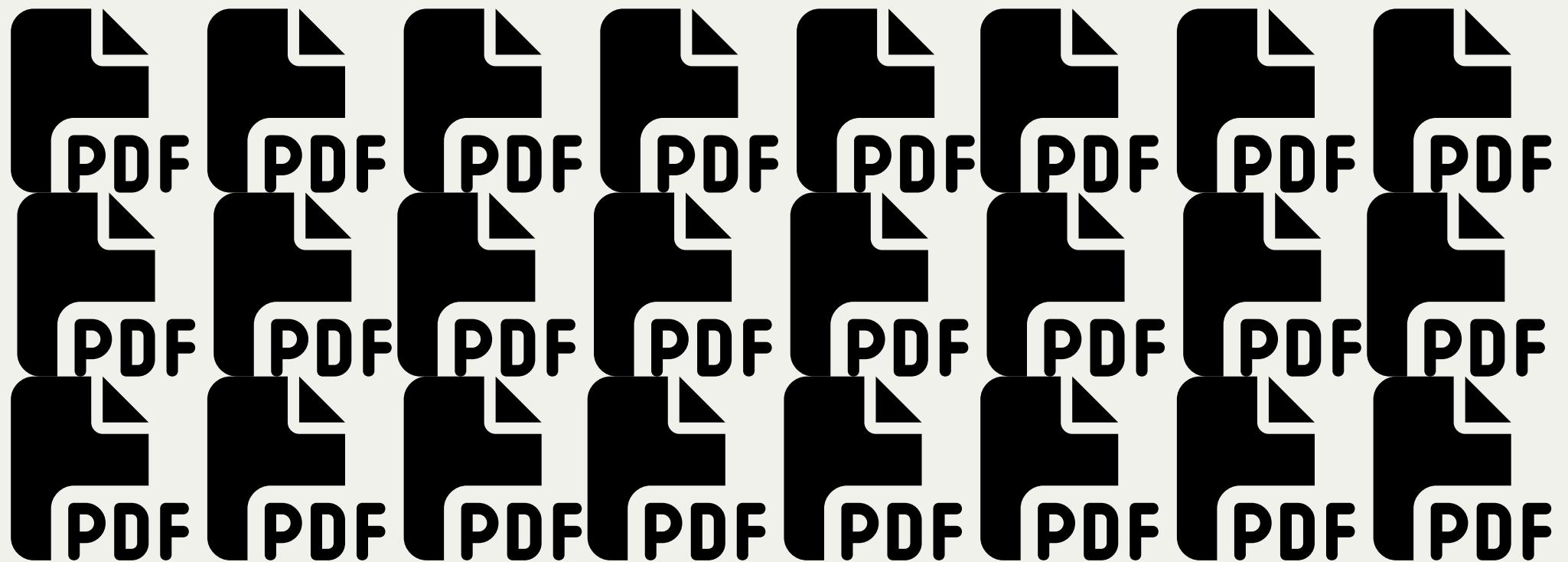
From one report many



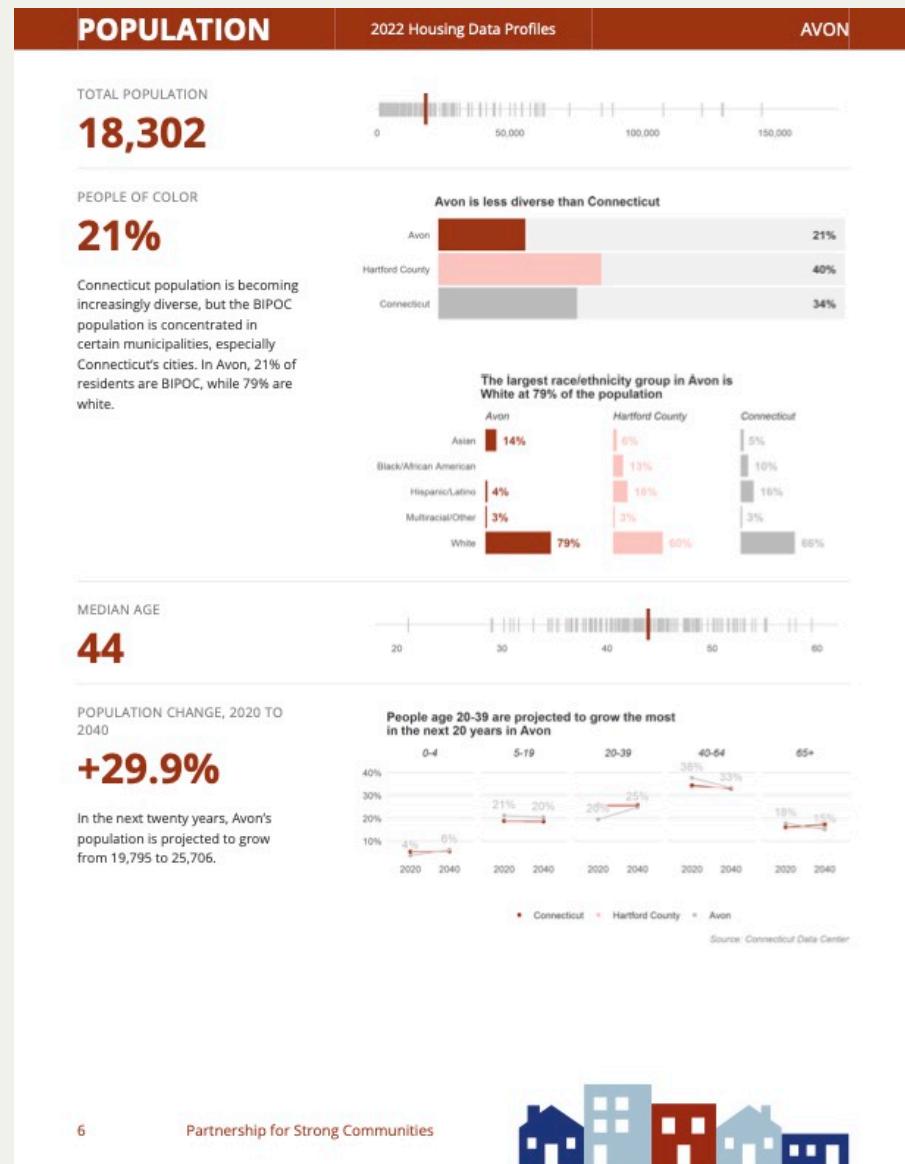
From one report many



=



PSC Housing



Oregon Voices



About the Summary

Oregon Voices began in summer of 2021 when The Ford Family Foundation invited 18,000 randomly selected households — 500 in each Oregon county — to complete a survey online or by mailing back a paper response. We then reached out to Ford Family friends and partners, encouraging them to participate and invite others to do the same. In total more than 4,300 Oregonians from all walks of life responded to the survey, generously sharing their honest reflections on the question we posed: *What is it like to live in your corner of the state?*

The following report provides a high-level summary of the survey data received from those who responded in Clackamas County. Here the number of Ford Family respondents outnumbered the random household respondents. For clarity, the two data sets have been combined in the visualizations below, even though the two samples show differences in demographics and response patterns. Please interpret the findings with this in mind. Data have been rounded to the nearest whole number.

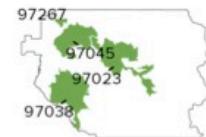
Total number of Clackamas County respondents: 168
Random household sample: 53, Ford Family sample: 115

Key Highlights

- The state's third-most populous county, Clackamas County is also home to rural, agricultural areas in the North Willamette Valley.
- Respondents appreciate their friendly and supportive community, especially during times of need, and report feeling safe where they live.
- Respondents say their community is changing in concerning ways, especially regarding population size and its impact on infrastructure and livability.



All reporting zip codes

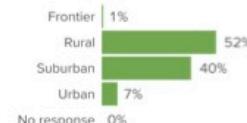


Top 3 reporting zip codes

- 1 97038
- 2 97023
- 3 97045

Rural/Urban

How respondents described their community, the immediate area where they live

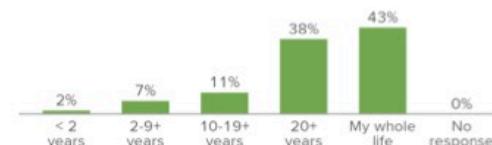


HOUSEHOLDS & FINANCES

Years living in Oregon

81%

of all respondents report living in Oregon for their whole life or 20 years or more



Homeownership

9 out of 10

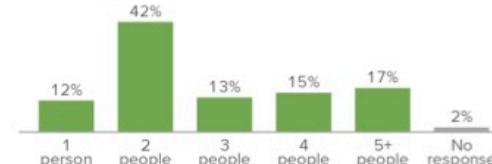
respondents own their home



Household size

2.9

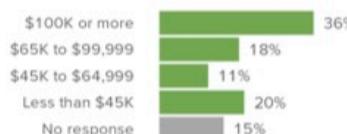
average number of people who live in the respondent's household



Household annual income

20%

of respondents reported household incomes falling under \$65K



Emergency funds

13%

of respondents would find it "difficult" or "very difficult" to get \$1,000 to pay for an emergency



Trouble making ends meet

44%

of respondents "agree" or "strongly agree" that "families are having trouble making ends meet"

Homelessness

55%

of respondents "agree" or "strongly agree" that "homelessness is a problem" in their community

IA2030

AFGHANISTAN

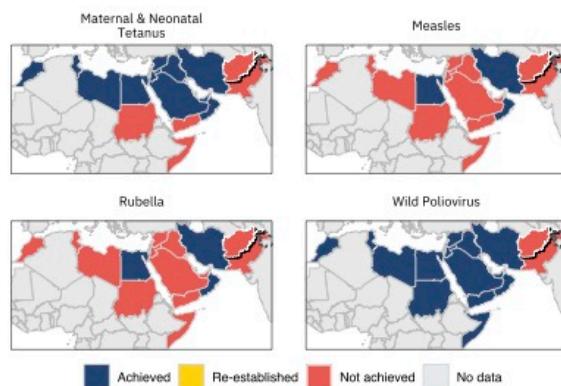
Impact Goals



1.2 Control, Eliminate & Eradicate Vaccine-Preventable Disease

In 2022, measles elimination was achieved in 4 countries in the WHO region, while it was re-established in 0 countries and not achieved in 17 countries.

The presentation of maps is not an expression of the opinion of Immunization Agenda 2030 regarding the legal status of countries/territories, their governing authorities, or their official borders.



Achievement of vaccine preventable disease control, elimination, and eradication targets in Afghanistan:



Data source: Verification, certification, and disease-specific committee reports. Targets for vaccine-preventable disease are elimination of measles transmission, elimination of rubella transmission, eradication of wildtype poliovirus, and elimination as a public health problem for maternal and neonatal tetanus. The baseline year is 2020.

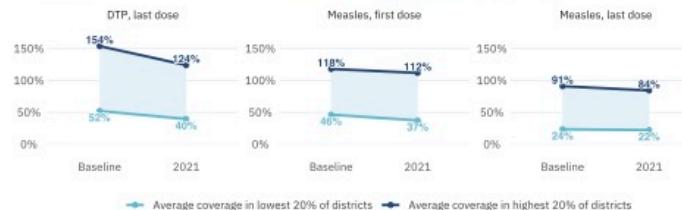
AFGHANISTAN

Strategic Priorities



3.2 Coverage Gap Between Afghanistan's Highest and Lowest Performing Districts

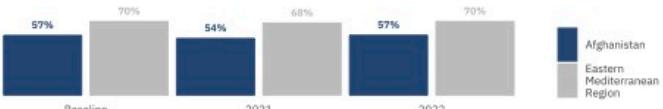
In 2021, average coverage for the last dose of DTP was **124%** in the highest 20% of districts of Afghanistan against **40%** in the lowest 20% of districts.



Data source: Administrative coverage reported in WHO/UNICEF Joint Reporting Form on Immunization (JRF) for the highest 20% and the lowest 20% of districts with lowest coverage

4.1 Breadth of Protection: Average coverage across all WHO-recommended vaccines

Breadth of protection was **57%** in 2022 for **Afghanistan** compared to **70%** for the **Eastern Mediterranean Region**.



Data source: WHO/UNICEF Estimates of National Immunization Coverage (WUENIC), WHO/UNICEF HPV Estimates. Please refer to the IA2030 scorecard for a list of all included antigens: https://scorecard.immunizationagenda2030.org/sp4_1.

7.1 Has an immunization research agenda

Legend: ✓ : Yes, ✗ : No, ⚡ : No data

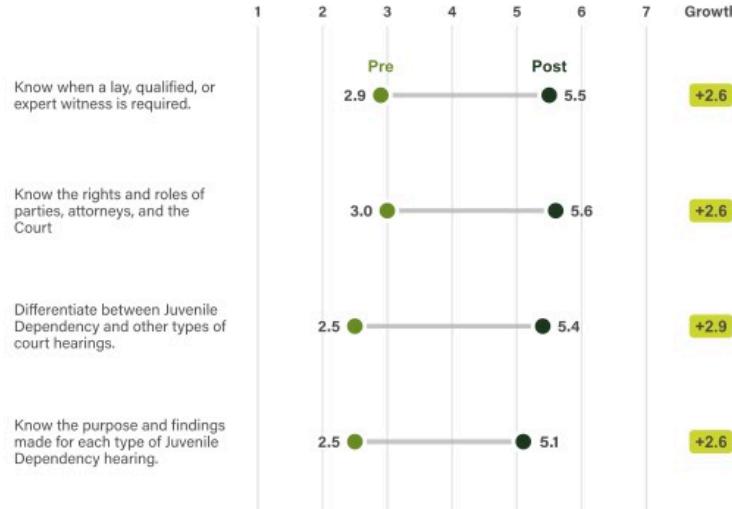
Data source: WHO/UNICEF Joint Reporting Form on Immunization (JRF). The baseline year is 2021.

Child Welfare Program

Juvenile Court Hearings & Roles in the Courtroom

January 29, 2024

PRE-POST Participant Self Assessed Knowledge Ratings

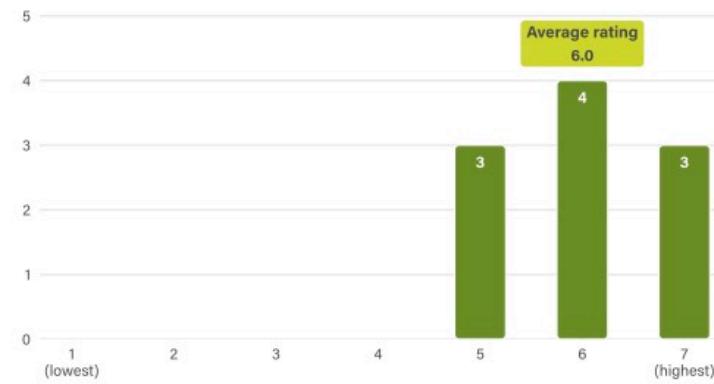


Juvenile Court Hearings & Roles in the Courtroom

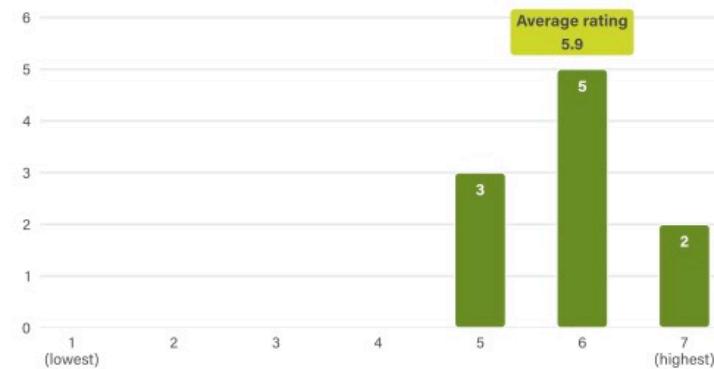
January 29, 2024

Scale Ratings

How well were the identified learning objectives covered?



How effective was the interaction opportunities provided in keeping you engaged in training?



Why not a dashboard ?

Why not a dashboard ?

Dashboard

- Pull approach
- Bring global & detailed understanding
- Interactive viz and tables
- For analysts & data practitioners
- <https://>

Why not a dashboard ?

Dashboard

- Pull approach
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Reports

- Push approach
- Bring local comprehension & awareness
- Static tailored viz
- For people on the field & partners
- Portable Document Format (PDF)

Why not something else ?

- Infographics
- Graphs
- Analysis note
- Excel files
- Data API
- ...

Why not something else ?

Ask:

- for what ?
- for who ?
- frequency
- ability to build yourself
- maintenance

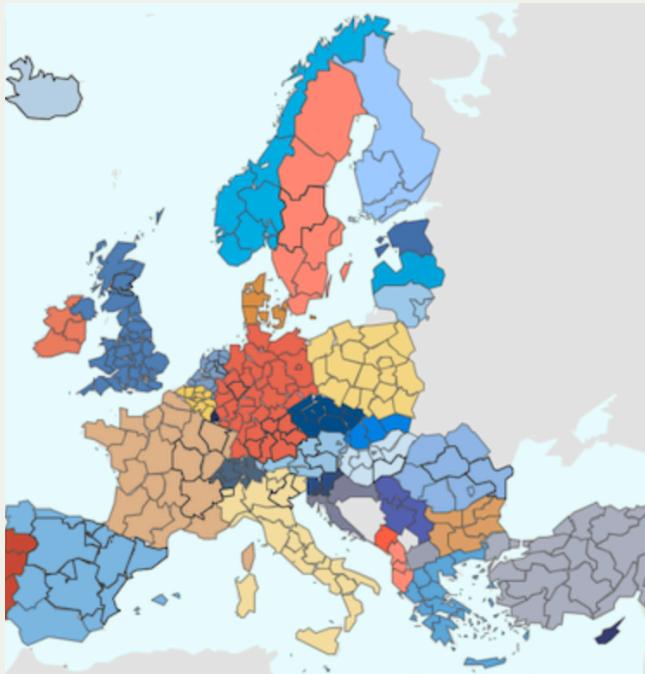
Parameters



Choose your parameters

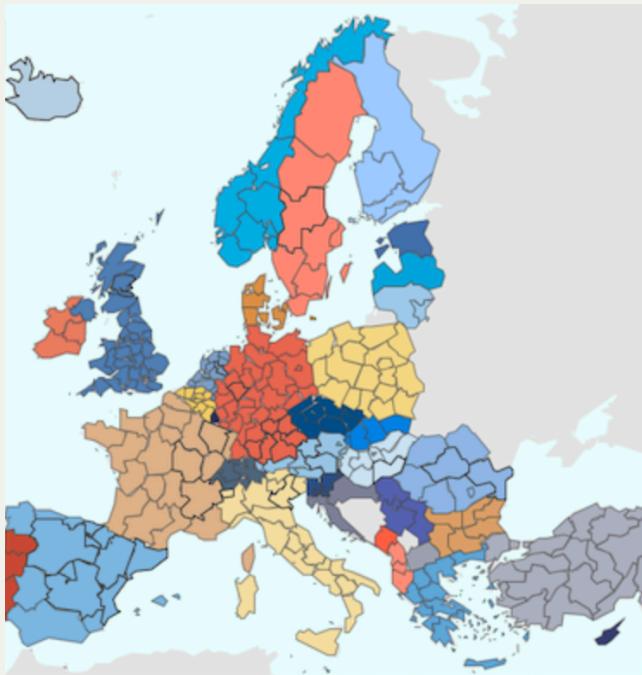
Choose your parameters

Areas

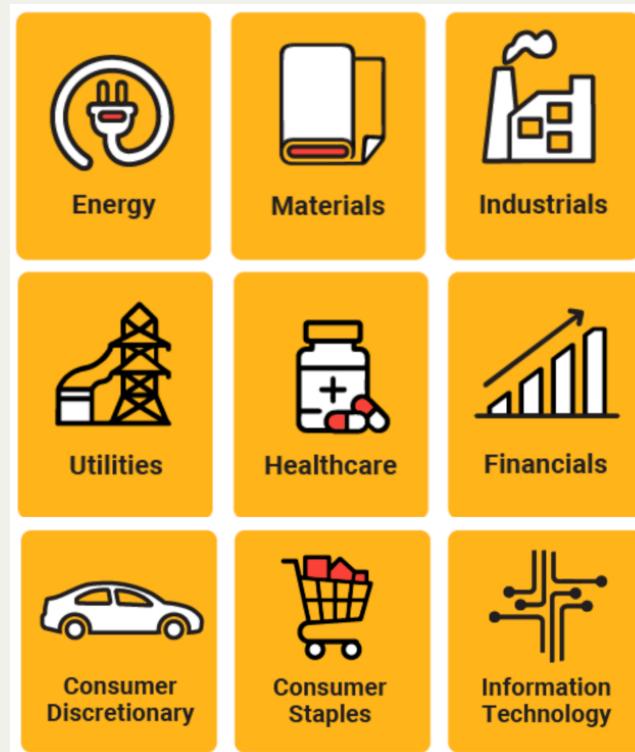


Choose your parameters

Areas

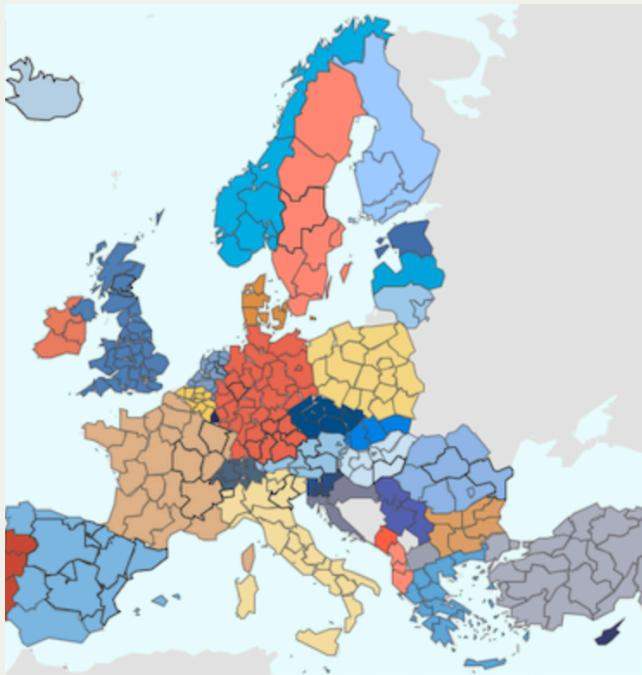


Sectors

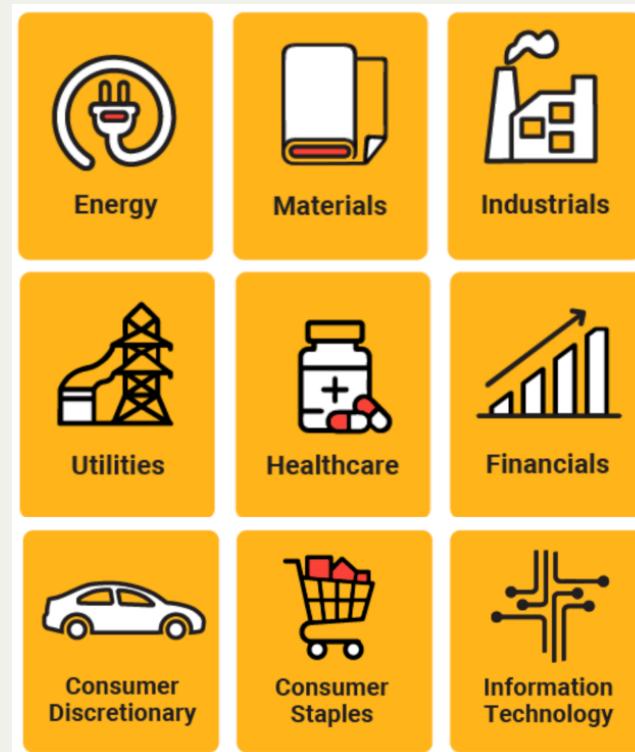


Choose your parameters

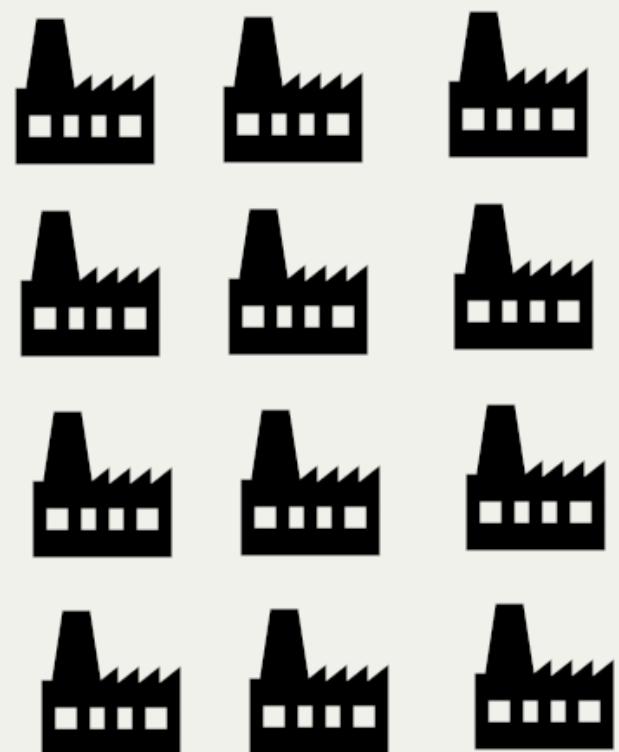
Areas



Sectors

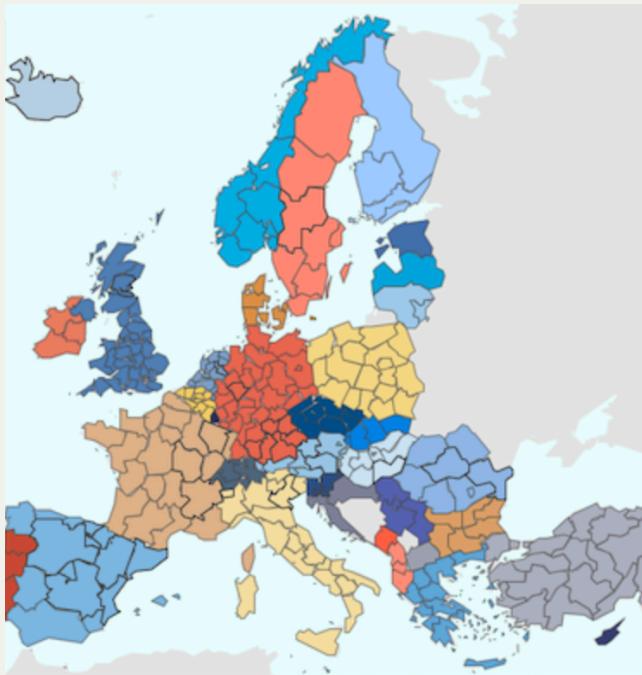


Units



Choose your parameters

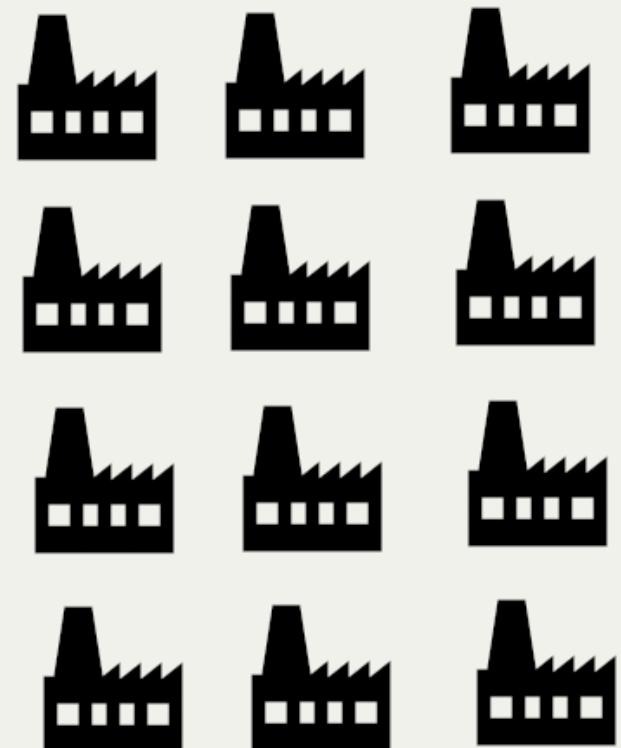
Areas



Sectors



Units



💡 Combine them but check you have enough data

Put them on the header

```
1 ---  
2 title: "IA2030 Country Profile"  
3 subtitle: "`r params$country`: 2023"  
4  
5 # params to change here  
6 params:  
7   country: "Somalia"  
8 ---
```

And re-use them with `params$XXX`:

- in code
- in inline text
- in your style

Pass the salt

- CSS

```
1 <style>
2 :root{
3   --country-name: `r params$country`;
4 }
5 </style>
```

- Typst (can be nested)

```
1 ---
2 country_name: `r params$country`
3 ---
```

A close-up photograph of two shiny, metallic wrenches lying on a dark, textured surface. One wrench is positioned diagonally across the frame, while the other is partially visible on the right side. The lighting highlights the reflective surfaces of the wrenches against the darker background.

Tools

Pick up a tool

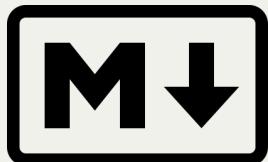
Pick up a tool



Pick up a tool



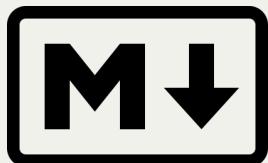
Text



Pick up a tool



Text



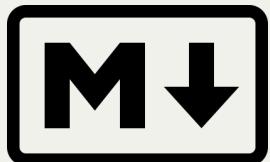
Computations



Pick up a tool



Text



Computations



PDF engines

L^AT_EX

typst

>weasyprint

paged.js

Comparison

Comparison

Typst

- Quarto format
- Lightning quick
- Custom language
for layout
- Great for simple
templates

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- Custom language for layout
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weasyprint

- Pandoc engine
- Quick
- No preview
- Best tool for most of the cases
- French 🐢

Comparison

Typst

- Quarto format
- Lightning quick
- Custom language for layout
- Great for simple templates

weasyprint

- Pandoc engine
- Quick
- No preview
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- French 🐹

pagedjs-cli

- Pandoc engine
- No direct preview
- Most complete tool
- JS based

Design advices

- Make your parameters explicit



Design advices

- Make your parameters explicit

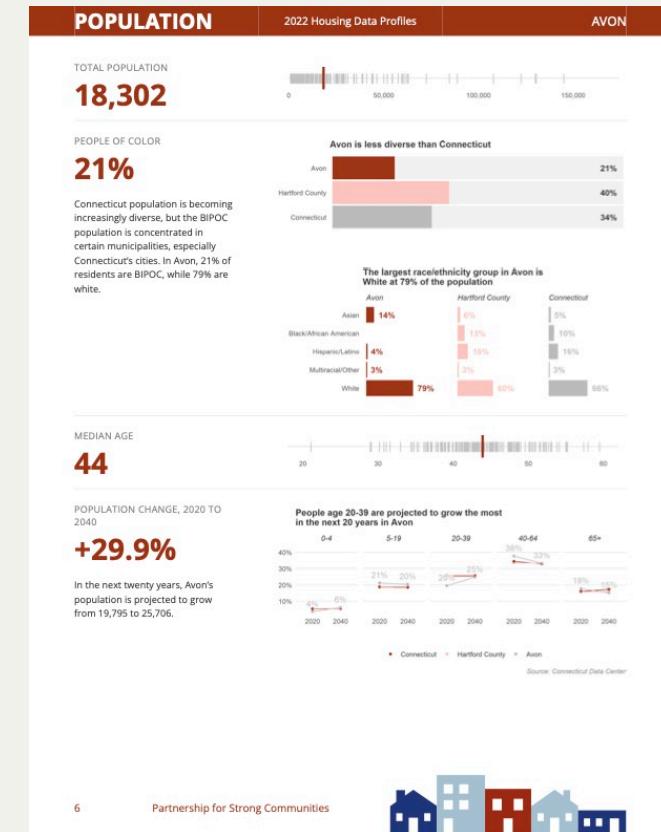
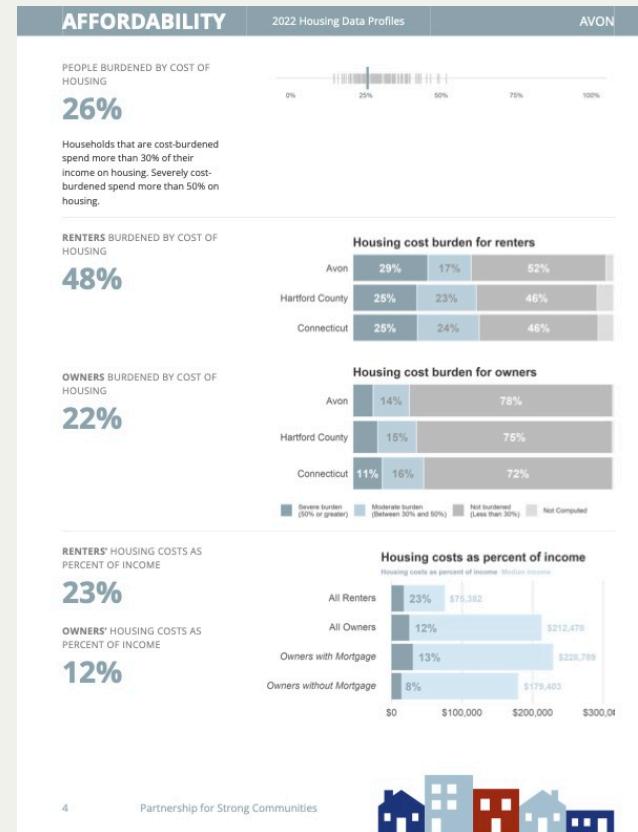
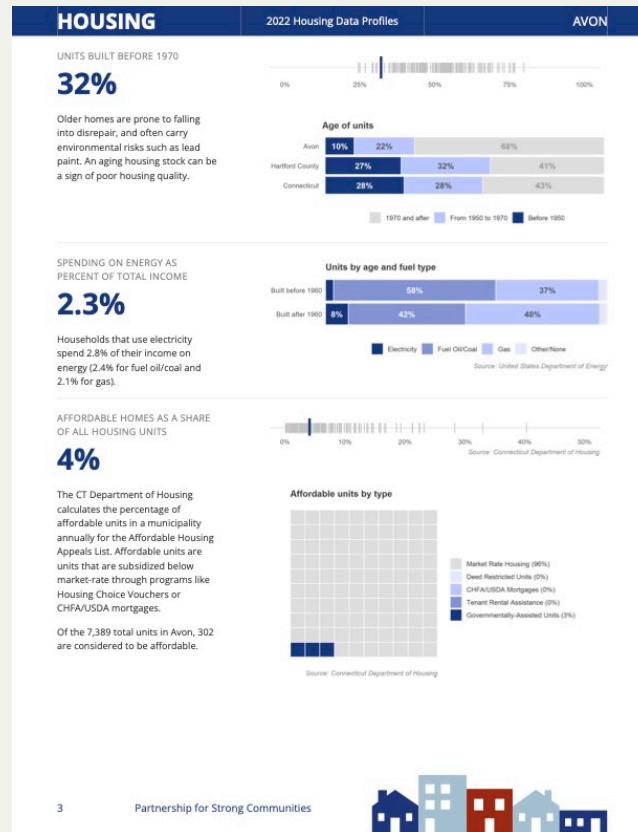


- Think about the extreme cases like long names in margins



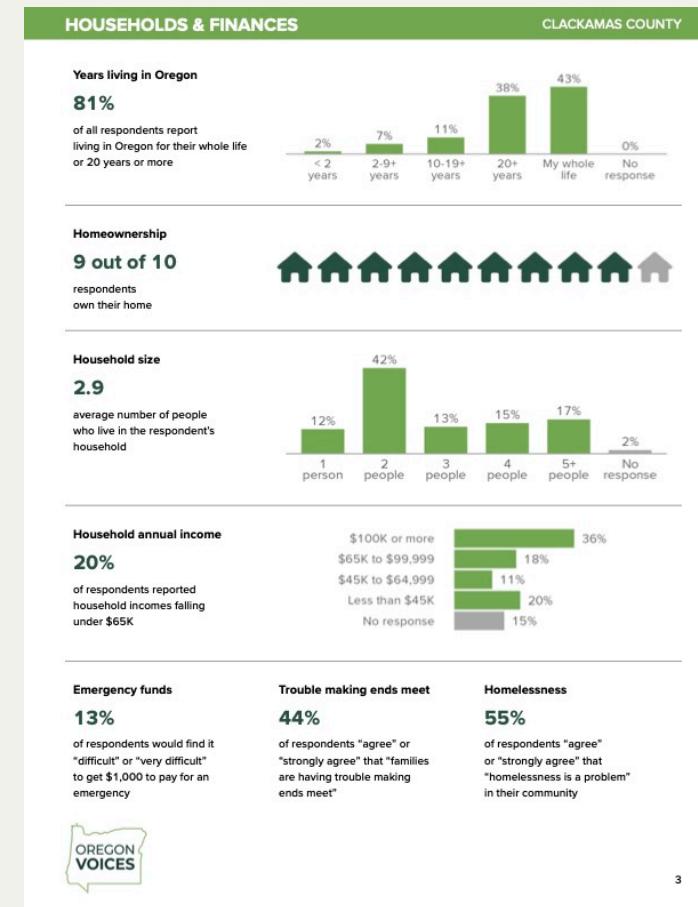
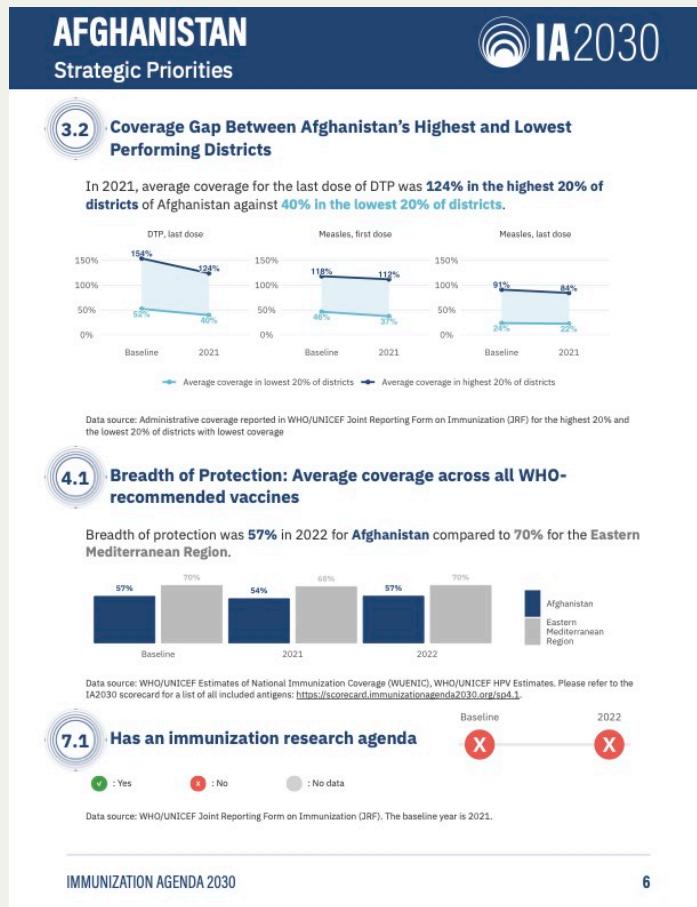
Design advices

- Make your sections visuals with named pages & colors



Design advices

- Columns are great but difficult to handle



Create a template with Typst

Set up the format + use partials:

```
1 format:  
2   typst:  
3     template-partials:  
4       - typst-template.typ  
5       - typst-show.typ  
6     font-paths: fonts/
```

- `typst-show.typ` transfer the parameters
- `typst-template.typ` is the template

Create a template with Typst

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- `typst-show.typ` transfer the parameters
- `typst-template.typ` is the template

💡 `font-paths` allow you to use custom fonts by putting them in a folder

Create a template with Typst

typst-show.typ

```
1 #show: my-report.with(
2   // main params
3   $if(title)$
4     title: "$title$",
5   $endif$
6   $if(subtitle)$
7     subtitle: "$subtitle$",
8   $endif$
9
10  // add params
11  $if(country-name)$
12    country_name: "$country-name$",
13  $endif$
14 )
```

Create a template with Typst

`typst-template.typ: all is valid until replaced`

```
1 // format with custom parameters
2 #let my-report(
3   title: "Title",
4   subtitle: none,
5   country_name: none
6   body,
7 ) = {
8   // text default
9   set text(
10     font: "Calibri",
11     size: 11pt,
12   )
13
14 // --- Configure first page ---
15 set page(
16   "us-letter",
17   background: place(right, rect(fill: rgb(#123456), width: 30%, h
18   margin: (left: 1in, right: 1in, top: 0.7in, bottom: 1in),
19 ).
```

Create a template with Typst

```
1 // --- Configure the rest of the pages ---
2 set page(
3   "us-letter",
4   background: place(top, rect(fill: rgb(#123456), width: 100%, he
5   footer: {
6     line(length: 100%)
7   },
8   margin: (left: 1in, right: 1in, top: 0.7in, bottom: 1in),
9 )
10
11 // --- headings ---
12 // level 1 is ## if there is no #
13 // level 2 is ###
14 // level 3 is ####
15 show heading.where(level: 1): it => [
16   #set text(17pt, weight: "bold")
17   #block(it.body)
18 ]
19
```

Create a template with CSS tools

- All the others tools are based on [CSS Paged Media](#)
- Differences but more or less compatible between them
- I did a [full talk](#) about how to template things (in French) for [pagedown](#). See the video 

Quick how-to

- Add your parameters as CSS vars: fonts, colors, margins, images

```
1  :root {  
2    /* colors */  
3    --report-navy: #1f4675;  
4    --report-light-blue: #59b8cd;  
5    --report-red: #eb5a53;  
6  
7    /* fonts */  
8    --main-font: "Calibri";  
9    --header-font: "Montserrat";  
10  
11   /* margin units */  
12   --unit: 0.7in;  
13   --unit_neg: -0.45in;  
14 }
```

Quick how-to

- Create your global style with them :

```
1 body {  
2   font-family: var(--main-font);  
3 }  
4 h1, h2, h3 {  
5   color: var(--report-red);  
6 }  
7 p {  
8   font-weight: 400;  
9   font-size: 12pt;  
10  color: var(--report-navy);  
11  padding-left: 0.55in;  
12 }
```

 Vars that have been created in the Quarto file can also be used

Quick how-to

- Define page size and margins

```
1 @page {  
2   /* page size */  
3   size: Letter;  
4  
5   /* margins */  
6   margin-top: 1in;  
7   margin-left: 0.3in;  
8   margin-right: 1in;  
9   margin-bottom: 1in;  
10  
11 }
```

Quick how-to

- Add content in margins

```
1 @page {  
2   /* country name */  
3   @top-left {  
4     content: var(--country-name);  
5   }  
6   /* logo */  
7   @top-right {  
8     content: "";  
9     width: 3.3in;  
10    background: url(img/logo_white.svg);  
11    background-repeat: no-repeat;  
12    background-size: 3in;  
13  }  
14 }
```

Quick how-to

- Add content in margins

```
1 @page {  
2   /* country name */  
3   @top-left {  
4     content: var(--country-name);  
5   }  
6   /* logo */  
7   @top-right {  
8     content: "";  
9     width: 3.3in;  
10    background: url(img/logo_white.svg);  
11    background-repeat: no-repeat;  
12    background-size: 3in;  
13  }  
14 }
```

💡 Use `content: "";` to display the background color

Quick how-to

- Add content in margins

```
1 @page {  
2   /* numbering */  
3   @bottom-right {  
4     content: counter(page);  
5     width: 7.1in;  
6     font-weight: bold;  
7   }  
8 }
```

To learn more about content in margins 

Quick how-to

- Build title page

```
1 @page:first{  
2   background-image: var(--cover-url);  
3   background-repeat: no-repeat, no-repeat;  
4   background-size: 5in, cover;  
5   background-position: 10% 10%, 50% 50%;  
6   @bottom-left {  
7     display: none;  
8   }  
9 }
```

- Don't forget `.title` and others

Quick how-to

- Build title page

```
1 @page:first{  
2   background-image: var(--cover-url);  
3   background-repeat: no-repeat, no-repeat;  
4   background-size: 5in, cover;  
5   background-position: 10% 10%, 50% 50%;  
6   @bottom-left {  
7     display: none;  
8   }  
9 }
```

- Don't forget `.title` and others

 `display: none;` helps to remove the global content in margins

Quick how-to

- Define named pages
 - with fenced div :::: named1 + ::::
 - or classic HTML <div class="named1"> + </div>
 - CSS side :

```
1 .named1 {  
2   page: .namedLayout;  
3 }  
4  
5 @page .namedLayout {  
6   @top-left {  
7     background-color: var(--report-navy);  
8     color: white;  
9   }  
10 }
```

Quick how-to

- And the content inside too

```
1 .named1 > h3 {  
2   color: var(--report-navy);  
3 }
```

Quick how-to

- Define utility functions :
 - columns (use **CSS Grid** first !)
 - `img` -> remove defaults margins
 - ...

Quick how-to

- Define utility functions :
 - columns (use **CSS Grid** first !)
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 - ...

 You can arrange some positions with negative margins and positive paddings. Play with them !

Quick how-to

- Define utility functions :
 - columns (use **CSS Grid** first !)
 - `img` -> remove defaults margins
 - ...

 You can arrange some positions with negative margins and positive paddings. Play with them !

 Since page size is fixed, think to use `position: absolute;` if needed

Presenting quarto.report

Presenting quarto.report

- Quarto extension

Presenting `quarto.report`

- Quarto extension
- based on `weasyprint`

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```
1 quarto add kantiles/quarto.report
```

Presenting quarto.report

Change parameters in the YAML (or `_quarto.yml` file)

```
1 style:  
2   font:  
3     header: "Outfit"  
4     main: "Montserrat"  
5     mono: "Fira Code"  
6     size: 12pt  
7   color:  
8     font: "#404040"  
9     font-accent: "#fdfdfd"  
10    accent: "#123456"  
11    third: "#987654"  
12   pagesize:  
13     width: 210mm  
14     height: 297mm  
15   logo: url(logo_url)  
16   main-img: url(img_url)
```

quarto.report - typewriter

- 1 format:
- 2 quarto.report-pdf+typewriter

- main image on title page
- table of contents by default



This is a fantastic title for a report I want to show to everybody

Did I ever tell you how this one was nice? Maybe not?

Thomas Vroylandt
2024-07-04



Table of contents

• A really awesome part 1	3
- Second level header	3
- Another second level header	3
- Table	5
- Still another one	9
- And now part 2	10
- Second level - once again	11
- Header 2, once again	11
- Second level, haven't I mentioned it before ?	11
- Second level again and again	12
- Some more text because I don't know what to write	12
- Second level again and again and again	13

A really awesome part 1

Blockquote title

Phasellus praeside metus at finibus congue. Cras placerat vehicula feugiat. Maecenas pharetra tincidunt leo vel interdum. Nunc id rhoncus lorem, blandit consequat lacus. Morbi eu ex ac dui bibendum congue. Nam vel leo ullamcorper, rhoncus ordo non, feugiat mi. Quisque egest bibendum risus. Cras mollis varius enim eu aliquet. Vivamus ac risus varius, maximus arcu nec, posuere nisl. Integer neque tellus, sagittis eu nisi id, porttitor luctus mi. Vestibulum scelerisque quis nisl ut pharetra.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit. Praesent tellus lectus, pulvinar non luctus non, faubus id diam. Ut condimentum, ante nec lobortis hendrerit, eros nunc gravida ante, id sodales ligula elit ut odio. Vestibulum imperdiet arcu quis massa facilis, et sollicitudin urna porttitor. Praesent laoreet velit ac sagittis efficitur. Sed sit amet porttitor ipsum. Aliquam magna leo, efficitur vel laoreet ut, gravida ut ligula.

Tables

Withkable

mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb	
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	16.7	8	360	175	3.15	3.440	17.02	0	0	3	2

With flextable

You have to add always_allow_html: yes in the YAML (strange it's supposed to be prefer-html: true).

Header 2, once again

Second level, haven't I mentioned it before ?

Level 4, oops

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit. Praesent tellus lectus, pulvinar non luctus non, faubus id diam. Ut condimentum, ante nec lobortis hendrerit, eros nunc gravida ante, id sodales ligula elit ut odio. Vestibulum imperdiet arcu quis massa facilis, et sollicitudin urna porttitor. Praesent laoreet velit ac sagittis efficitur. Sed sit amet porttitor ipsum. Aliquam magna leo, efficitur vel laoreet ut, gravida ut ligula.

Level 4, again ???

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit. Praesent tellus lectus, pulvinar non luctus non, faubus id diam. Ut condimentum, ante nec lobortis hendrerit, eros nunc gravida ante, id sodales ligula elit ut odio. Vestibulum imperdiet arcu quis massa facilis, et sollicitudin urna porttitor. Praesent laoreet velit ac sagittis efficitur. Sed sit amet porttitor ipsum. Aliquam magna leo, efficitur vel laoreet ut, gravida ut ligula.

Second level again and again

Level 4, seems like there is some identical headers here

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit. Praesent tellus lectus, pulvinar non luctus non, faubus id

quarto.report - chalk

1 format:

2 quarto.report-pdf+chalk

- two colors template
- table of contents by default

This is a fantastic title for a report I want to show to everybody

Did I ever tell you how this one was nice ? Maybe not ?

Thomas Vroylandt
2024-06-20



Table of contents

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• Second level header	3
• Another second level header	3
• Tables	5
• Still another one	9
• And now part 2	10
• Second level - once again	11
• Header 2, once again	11
• Second level, haven't I mentioned it before ?	11
• Second level again and again	12
• Some more text because I don't know what to write	12
• Second level again and again and again	13

2

A really awesome part 1

Second level header

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit. Praesent tellus lectus, pulvinar non luctus non, faucibus id diam.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Another second level header

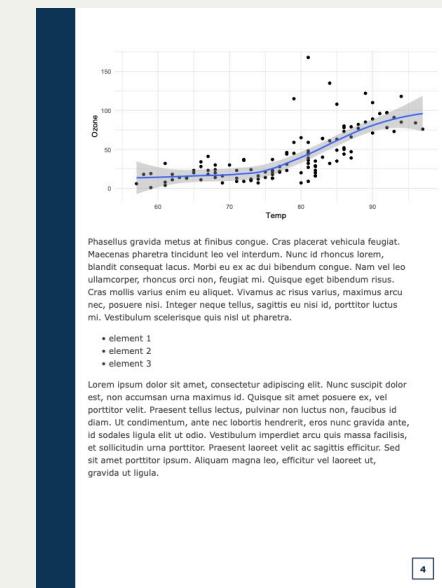
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc suscipit dolor est, non accumsan urna maximus id. Quisque sit amet posuere ex, vel porttitor velit.

```
'geom_smooth()': using formula = 'y ~ x'
```

Warning: Removed 37 rows containing non-finite outside the set ('stat_smooth()').

Warning: Removed 37 rows containing missing values or values ('geom_point()').

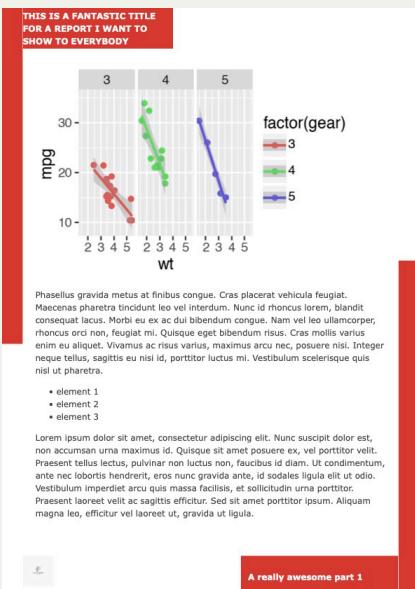
3



quarto.report - corner

- 1 format:
- 2 quarto.report-pdf+corner

- well suited for parametrised reporting
- one additional named page by default



THIS IS A FANTASTIC TITLE FOR A REPORT I WANT TO SHOW TO EVERYBODY

blockquote title

Phasellus gravida metus at finibus congue. Cras placerat vehicula feugiat. Maecenas pharetra tincidunt leo vel interdum. Nunc id rhoncus lorem, blandit consequat lacus. Morbi eu ex ac dui bibendum congue. Nam vel leo ullamcorper, rhoncus orci non, feugiat mi. Quisque eget bibendum risus. Cras mollis varius enim eu aliquet. Vivamus ac risus varius, maximus arcu nec, posuere nisi. Integer neque tellus, sagittis eu nisi id, porttitor luctus mi. Vestibulum scelerisque quis nisl ut pharetra.

Tables

With great_tables

S&P 500						
2010-06-07 to 2010-06-14						
	date	open	high	low	close	volume
Mon, Jun 14, 2010	\$1,095.00	\$1,105.91	\$1,089.03	\$1,089.63	4,438	
Fri, Jun 11, 2010	\$1,082.65	\$1,092.25	\$1,077.12	\$1,091.60	4,068	
Thu, Jun 10, 2010	\$1,058.77	\$1,087.85	\$1,058.77	\$1,086.84	5,148	
Wed, Jun 9, 2010	\$1,062.75	\$1,077.74	\$1,052.25	\$1,055.69	5,988	
Tue, Jun 8, 2010	\$1,050.81	\$1,063.15	\$1,042.17	\$1,062.00	6,198	
Mon, Jun 7, 2010	\$1,065.84	\$1,071.36	\$1,049.86	\$1,050.47	5,478	

A really awesome part 1

THIS IS A FANTASTIC TITLE FOR A REPORT I WANT TO SHOW TO EVERYBODY

Header 2, once again

Second level, haven't I mentioned it before ?

Level 4, oops

Phasellus gravida metus at finibus congue. Cras placerat vehicula feugiat. Maecenas pharetra tincidunt leo vel interdum. Nunc id rhoncus lorem, blandit consequat lacus. Morbi eu ex ac dui bibendum congue. Nam vel leo ullamcorper, rhoncus orci non, feugiat mi. Quisque eget bibendum risus. Cras mollis varius enim eu aliquet. Vivamus ac risus varius, maximus arcu nec, posuere nisi. Integer neque tellus, sagittis eu nisi id, porttitor luctus mi. Vestibulum scelerisque quis nisl ut pharetra.

Level 4, again ???

Phasellus gravida metus at finibus congue. Cras placerat vehicula feugiat. Maecenas pharetra tincidunt leo vel interdum. Nunc id rhoncus lorem, blandit consequat lacus. Morbi eu ex ac dui bibendum congue. Nam vel leo ullamcorper, rhoncus orci non, feugiat mi. Quisque eget bibendum risus. Cras mollis varius enim eu aliquet. Vivamus ac risus varius, maximus arcu nec, posuere nisi. Integer neque tellus, sagittis eu nisi id, porttitor luctus mi. Vestibulum scelerisque quis nisl ut pharetra.

Second level again and again

Level 4, seems like there is some identical headers here

Phasellus gravida metus at finibus congue. Cras placerat vehicula feugiat. Maecenas pharetra tincidunt leo vel interdum. Nunc id rhoncus lorem, blandit consequat lacus. Morbi eu ex ac dui bibendum congue. Nam vel leo ullamcorper, rhoncus orci non, feugiat mi. Quisque eget bibendum risus. Cras mollis varius enim eu aliquet. Vivamus ac risus varius, maximus arcu nec, posuere nisi. Integer neque tellus, sagittis eu nisi id, porttitor luctus mi. Vestibulum scelerisque quis nisl ut pharetra.

Header 2, once again

THIS IS A FANTASTIC TITLE FOR A REPORT I WANT TO SHOW TO EVERYBODY

ante nec lobortis hendrerit, eros nunc gravida ante, id sodales ligula elit ut odio. Vestibulum imperdiet arcu quis massa facilisis, et sollicitudin una porttitor. Praesent laoreet velit ac sagittis efficitur. Sed sit amet porttitor ipsum. Aliquam magna leo, efficitur vel laoreet ut, gravida ut ligula.

Header 2, once again

Data

5

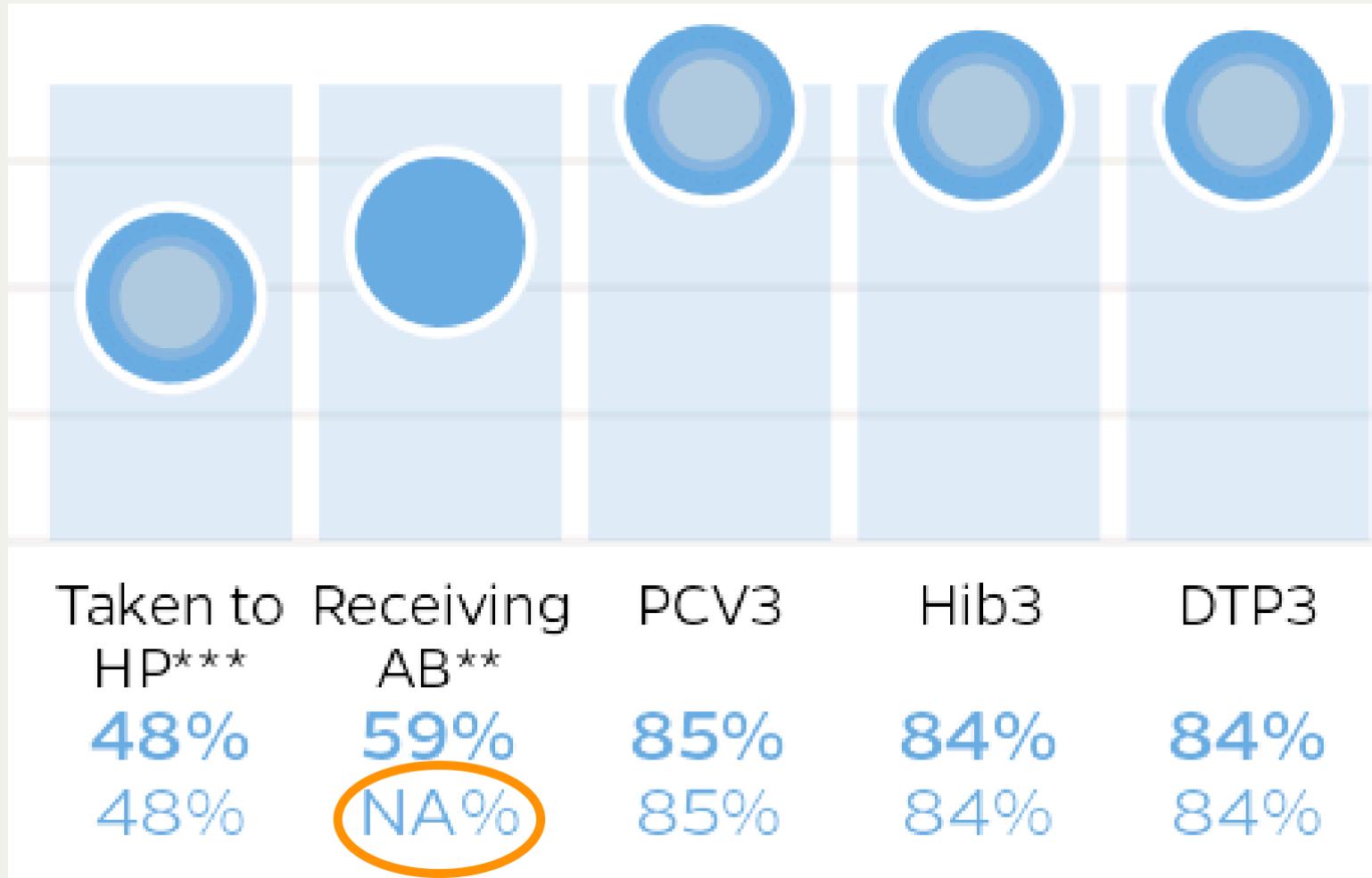
4

Prepare your data

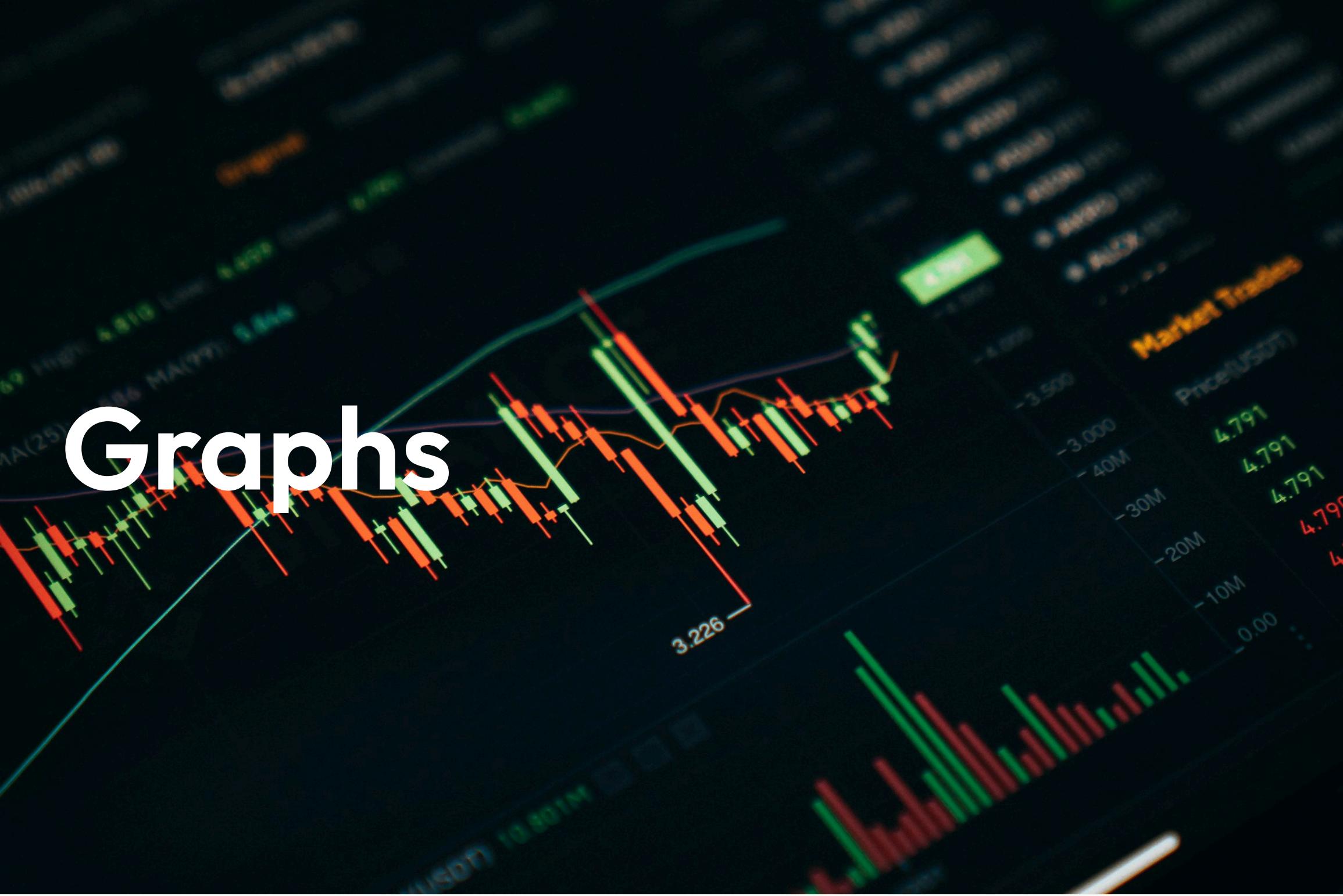
- Avoid as much as possible computations within the report
- Pay attention to formats - use **scales**
- **⚠ Make sure your data is unique by parameter**

Check missing data

Compute explicit missing data with `tidyverse :: complete`



Graphs



Pay attention to limits

- Your graphs should work in all cases
- The more granular you go, the more extreme your values will be
- You should plot your data first

Pay attention to limits

- Your graphs should work in all cases
- The more granular you go, the more extreme your values will be
- You should plot your data first

 If you got this warning from `ggplot2`, you probably messed up something with limits

Warning message:

Removed 7 rows containing missing values or values outside the scale range
(`geom_point()`).

Pay attention to limits

Limits can be set dynamically

```
1 ggplot(...) +  
2   ... +  
3   scale_x_continuous(  
4     breaks = seq(2021, 2023, 1),  
5     limits = c(min(df$year) - .1, max(df$year) + .1),  
6     position = "top",  
7     labels = c("Baseline", "2022", "2023")  
8   )
```

Handle the size

- Output as `svg` or `svglite` (with `fig-format`)
- Setup `fig-width` and `fig-height` for all plots

Handle the size

- Output as `svg` or `svglite` (with `fig-format`)
- Setup `fig-width` and `fig-height` for all plots
- Size can be set dynamically (in inches)

```
1 if(params$country == "Somalia") {  
2   maps_width <- 5  
3   maps_height <- 4  
4 } else{  
5   ...  
6 }
```

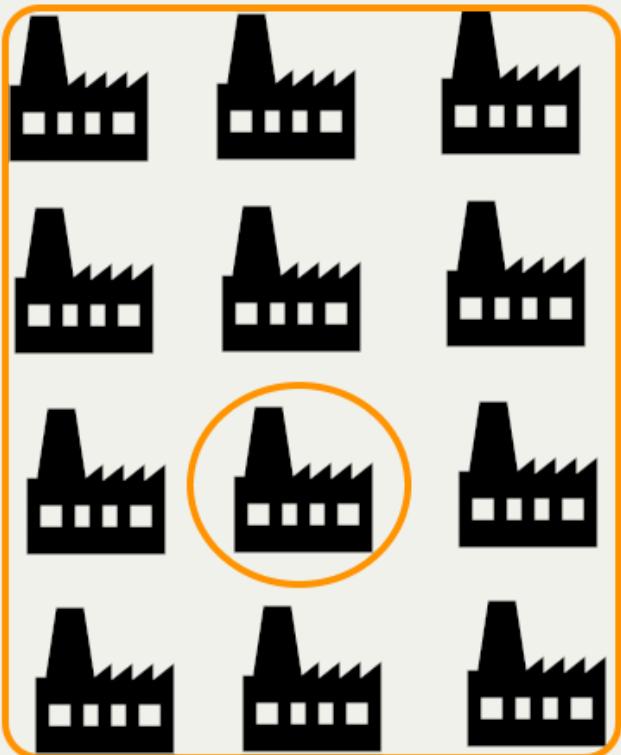
Then used in chunks with `!expr`

```
1 ````{r}  
2 #| fig-width: !expr maps_width + .5  
3 #| fig-height: !expr maps_height  
4 ````
```

Set up a reference

Set up a reference

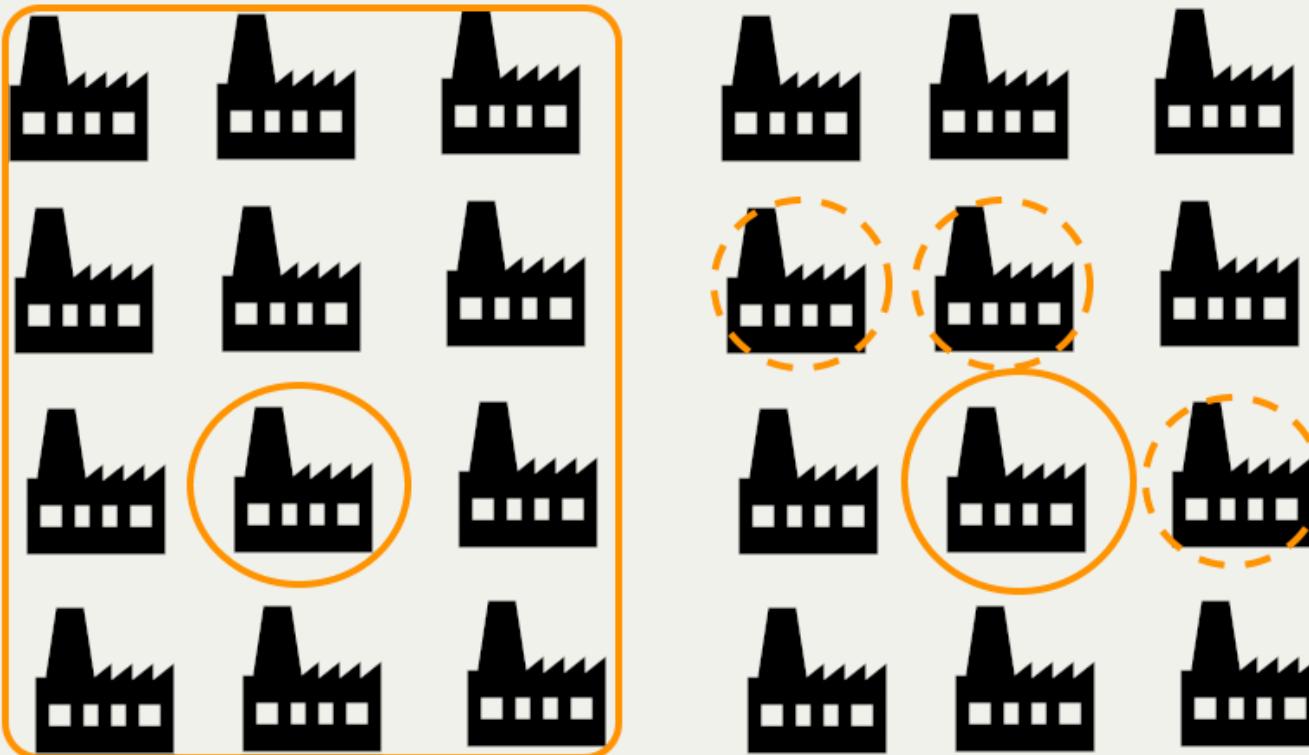
To the global level



Set up a reference

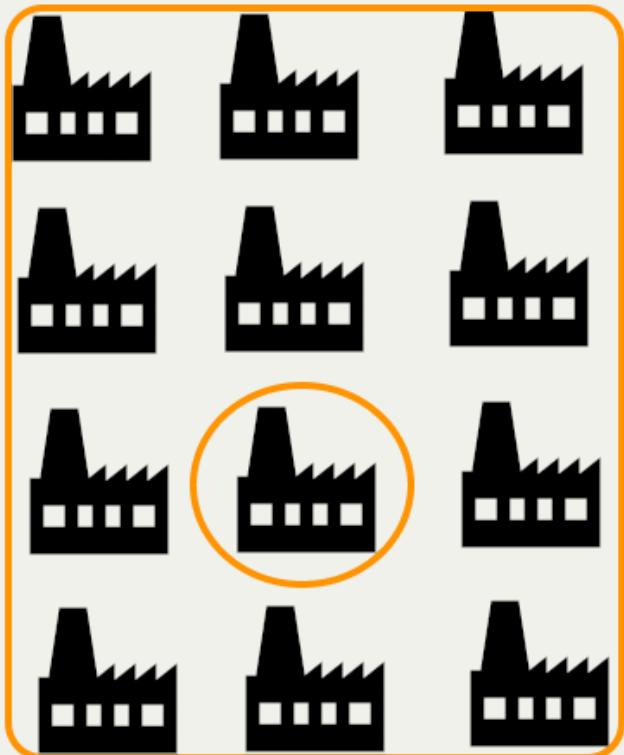
To the global level

To others

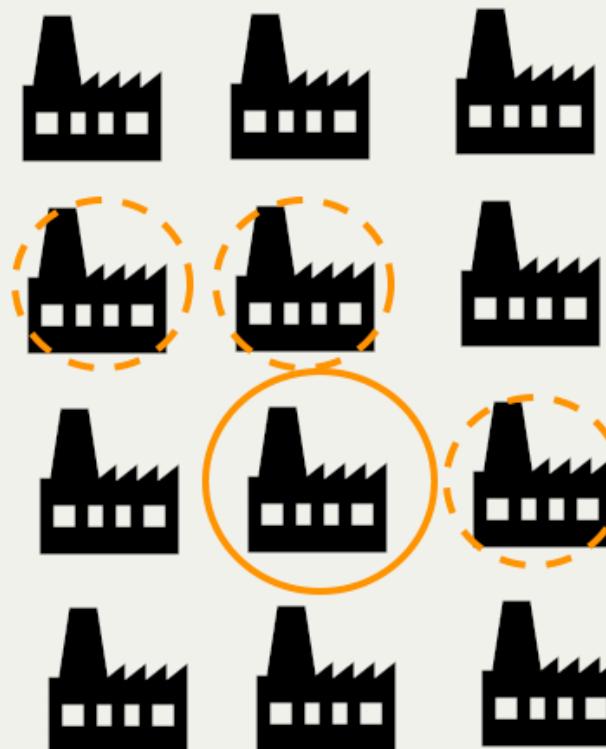


Set up a reference

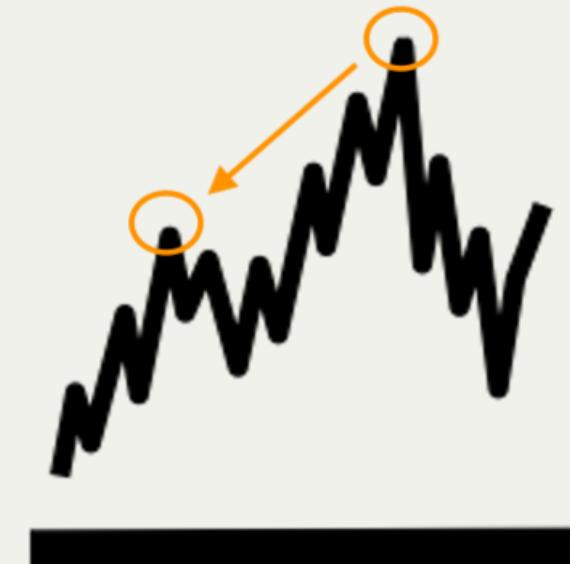
To the global level



To others

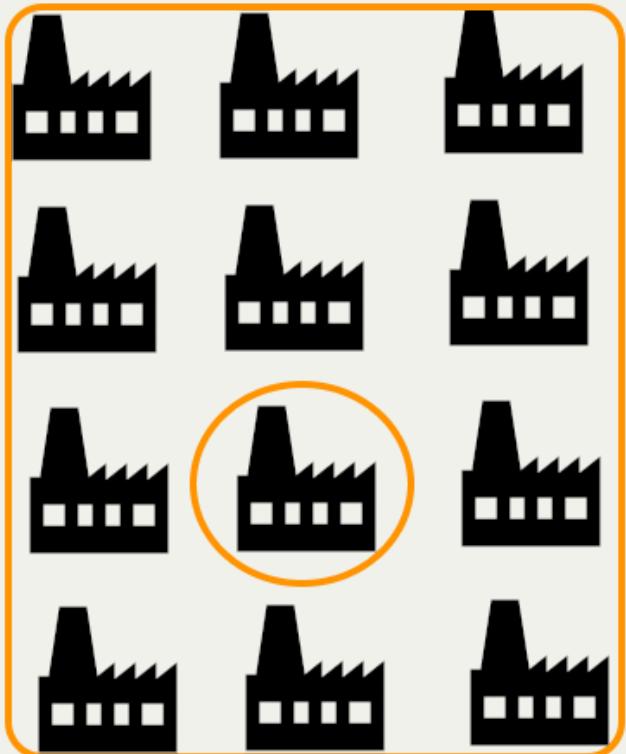


In time

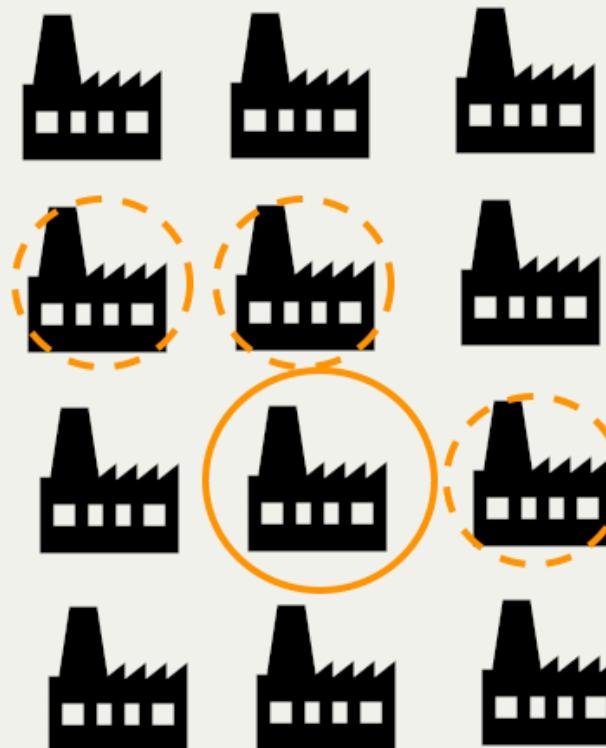


Set up a reference

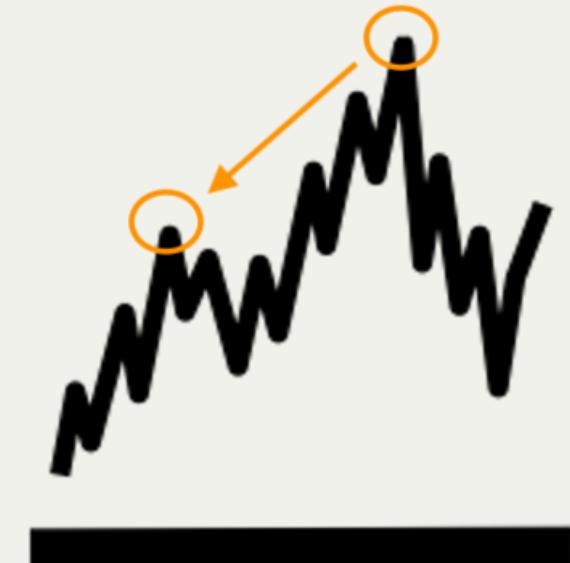
To the global level



To others

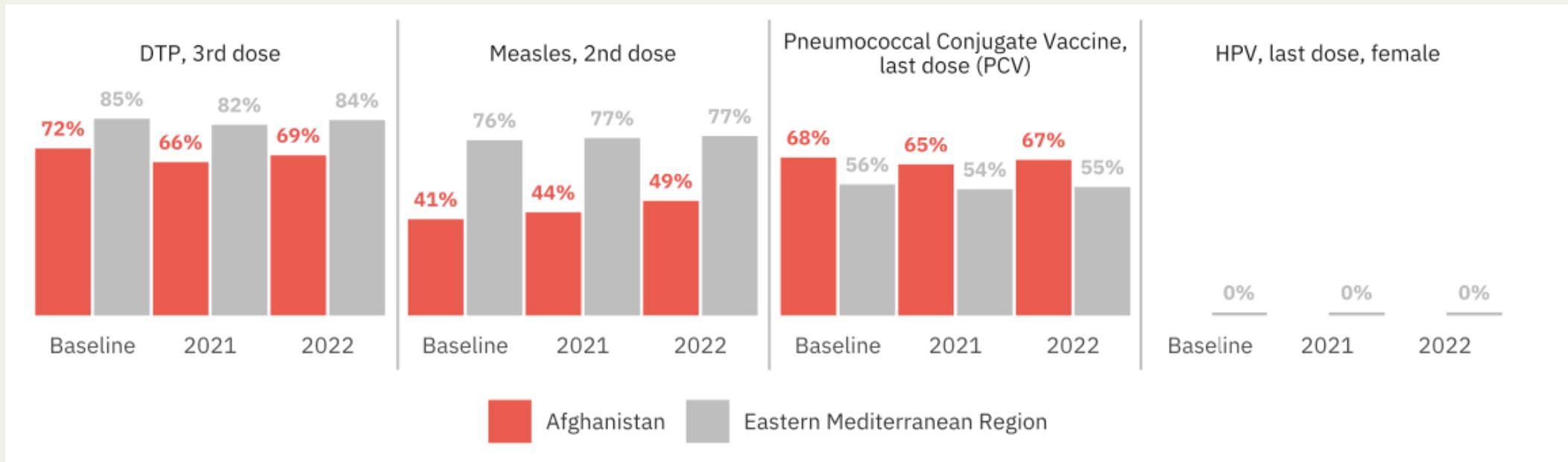


In time

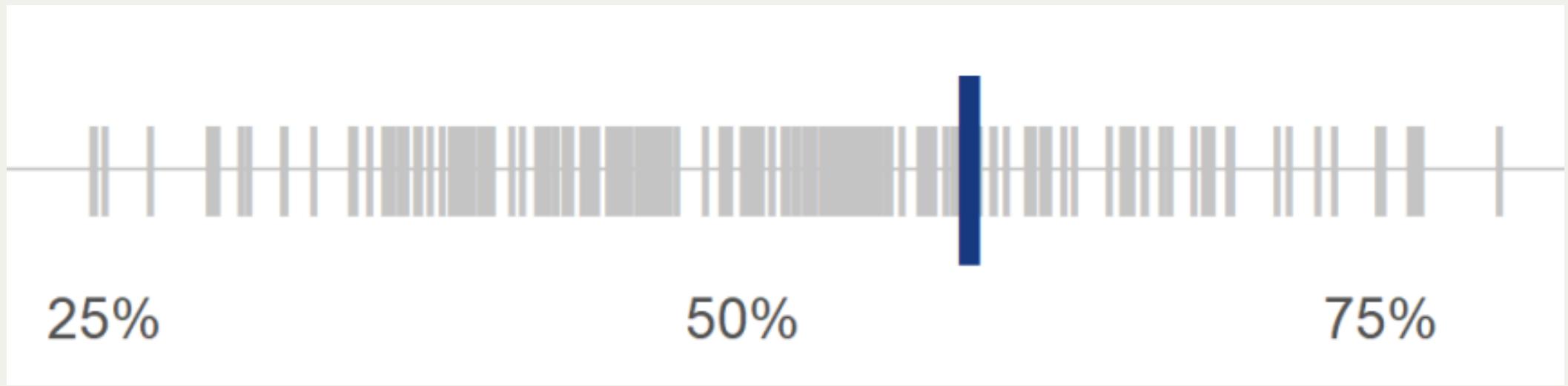


💡 You can pick them all

Set up a reference



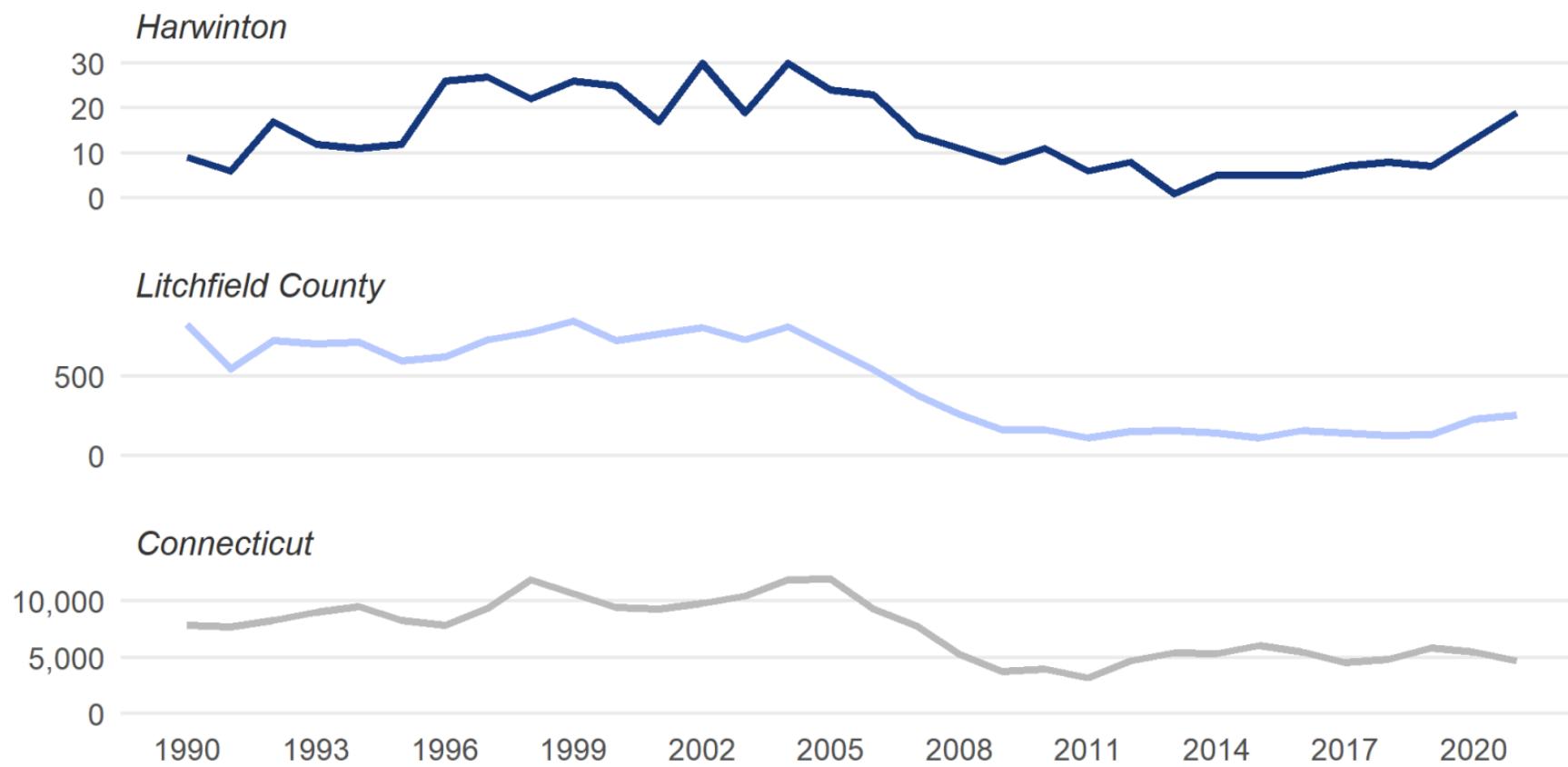
Set up a reference



Set up a reference

Number of building permits per year, 1990-2021

Note: y axis varies between locations



Source: Connecticut Department of Economic and Community Development

Declutter & highlight

Q David talked about all of this at Cascadia R conf 

Declutter & highlight

Q David talked about all of this at Cascadia R conf 

- use facets
- don't label everything
- hide small values
- think about labels position
- highlight what's important

Text



Stay dynamic

Stay dynamic

- Be informative about comparisons :
 - growth
 - difference

Stay dynamic

- Be informative about comparisons :
 - growth
 - difference
- Compute before display

Stay dynamic

- Be informative about comparisons :
 - growth
 - difference
- Compute before display
- Use glue or epoxy

```
1  ````{epoxy, .data=txt_data_1_3}
2  In {year}, measles elimination was <span class = "txt-navy">achieve
3  </span>in {nb_achieved} countries in the WHO region, while it was
4  <span class = "txt-yellow">re-established</span> in
5  {nb_reestablished} countries and <span class = "txt-red">
6  not achieved</span> in {nb_not_achieved} countries.
7  ````
```

Highlight

Highlight

Use :

- **size**
- **color**
- **weight**

→ ` ... `

Highlight

Use :

- **size**

- **color**

- **weight**

→ ` ... `

UNITS BUILT BEFORE 1970

59%

In 2021, average coverage for the last dose of DTP was **124% in the highest 20% of districts** of Afghanistan against **40% in the lowest 20% of districts**.



Generate

Render them all

- list of parameters
- map
- `quarto_render`

Render them all

```
1 map(  
2   country_list,  
3   \_(x)quarto_render(  
4     input = "path.qmd",  
5     output = glue::glue("report_{x}"),  
6     params = list(country = country)  
7   ),  
8   .progress = TRUE  
9 )
```

💡 Use `fs :: file_move` to move your reports to the right folder (see )

Quality insurance

Quality insurance

- Check the number of pages !

```
1 walk(list.files("generated_reports/", full.names = TRUE),  
2       function(x) {  
3         pdf_length <- pdftools::pdf_length(x)  
4         if (pdf_length != 6) {  
5           print(paste0(x, " reports ERROR"))  
6         } else{  
7           print("OK")  
8         }  
9       })
```

Quality insurance

- Check the number of pages !

```
1 walk(list.files("generated_reports/", full.names = TRUE),  
2       function(x) {  
3         pdf_length <- pdftools::pdf_length(x)  
4         if (pdf_length != 6) {  
5           print(paste0(x, " reports ERROR"))  
6         } else{  
7           print("OK")  
8         }  
9       })
```

Thanks !