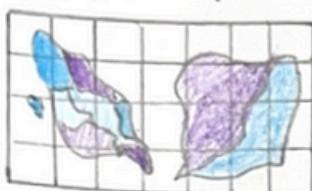


# IDEA

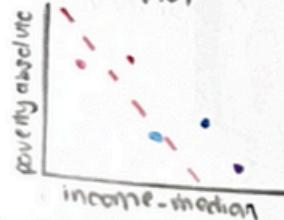
1. Geospatial

a) choropleth map

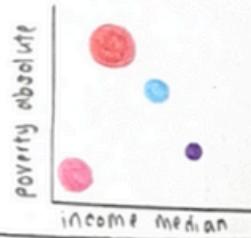


3. Quantitative

a) Scatter plot

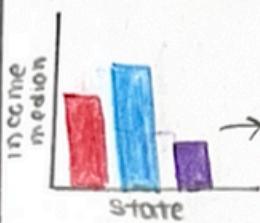


b) Bubble chart

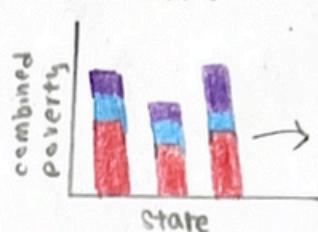


2. Categorical

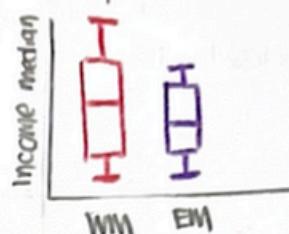
a) vertical bar chart



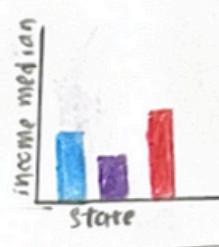
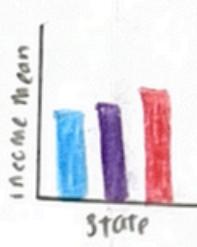
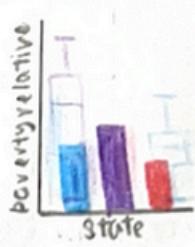
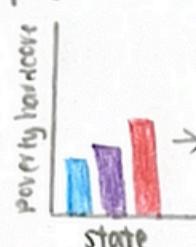
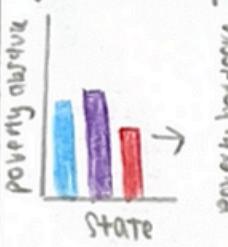
b) stacked bar chart



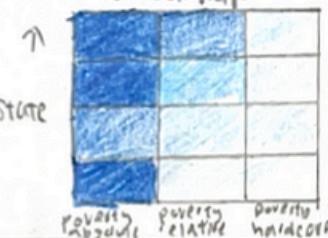
c) Boxplot



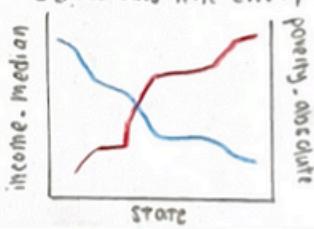
d) small multiples



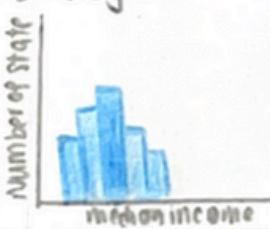
c) Heatmap



d) dual axis line chart

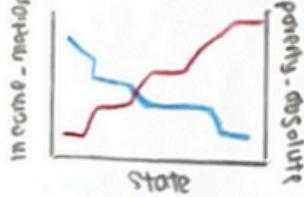


e) histogram



# FILTER

2d) dual axis line chart



Reason: This is a plot two measures with different units, which can be easy to mislead users

# CATEGORISE

Geospatial

1a

Display data that is tied to a physical location, showing geographic disparities

Categorical

2a, 2b, 2c, 2d

Compare discrete group such as states or region to show ranking or categorical comparison

Quantitative

3a, 3b, 3c, 3d, 3e

Focus on numerical relationships to reveal patterns, trends and correlations

# COMBINE AND REFINER

1. May combine 2b and 2c into one as they compare multiple attributes altogether.

# QUESTION

1. Which chart can I use to identify anomalies?

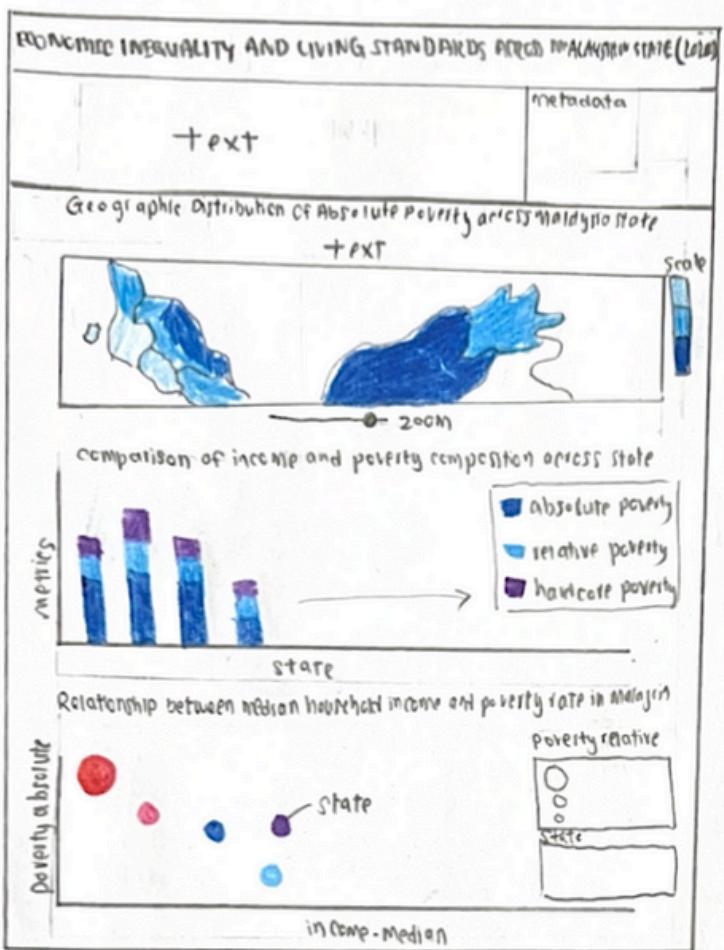
→ Scatterplot will be the best option, as it can easily spot outliers, if points do not follow trend

2. Should the visualisation focus only on individual states, or should it also include regional groupings?

→ If the goal is precision, then it is best to focus only on states

# AYOUT

\* Choropleth is used in more than one sheet due to requirements



# FOCUS

The visualization shows the economic inequality and living standards across Malaysian state in the year 2022.

- ① The choropleth map visualises the spatial inequality by shading each Malaysian state according to its absolute poverty rate. Such to highlight where economic disparities are concentrated, and emphasise the contrast between each state.
- ② The stacked bar chart compares the income and poverty composition across Malaysian state with the following metrics such as absolute poverty, relative poverty, and hardcore poverty.
- ③ The bubble chart visualizes the relationship between median household income and with the absolute poverty rate, while the bubble size represents relative poverty. Such it help users to see not only the correlation between income and poverty but also the depth of inequality within each state.

Title: Economic Inequality and Living Standards across Malaysia states (2022)  
Author: Rachelle Yap Zen Yi  
Date: 19 October 2022  
Sheet: 2  
Topic: FIT3179 Data Visualisation 2

# OPERATION

## 1) Tooltip Feature

↳ displays detailed information when the users hover over a specific data point, bar or state

## 2) Zoom Feature

↳ allow users to zoom in or out of a visual to focus on specific regions or clusters

## 3) Highlight Feature

↳ visually emphasises the selected or hovered data items while dimming others

# DISCUSSION

## 1) Advantages

↳ Strong spatial context to allow viewers to view regional patterns

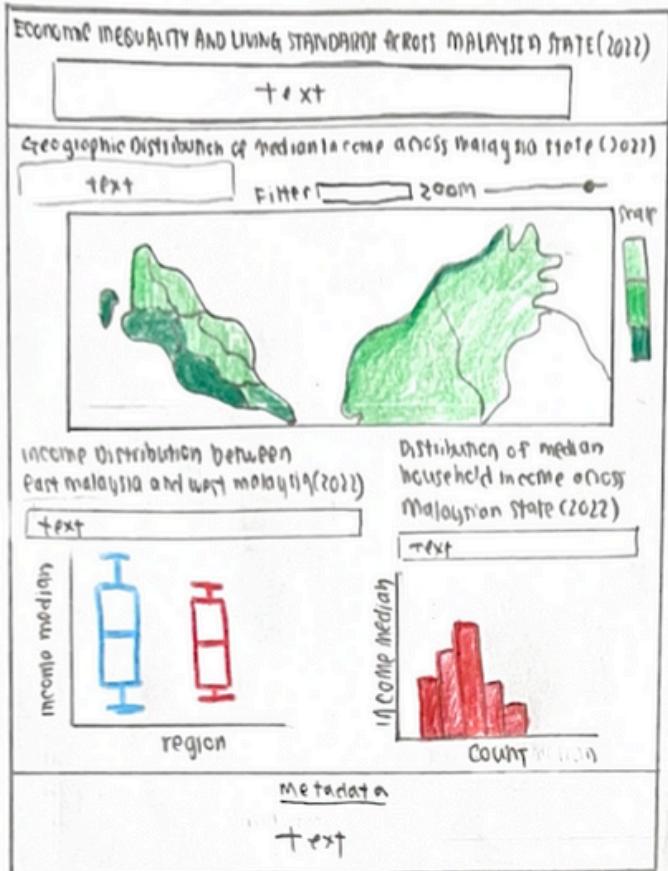
↳ combination of chart allow users to explore inequality from multiple angles

## 2) Disadvantages

↳ chart might have different scale and unit, so it's important to be not misleading

# LAYOUT

- \* choropleth is used in more than one sheet due to requirements



Title: Economic Inequality and Living Standards across Malaysia States (2022)  
Author: Rachelle Yap Zen Y.  
Date: 19 October 2025  
sheet: 3  
Task: FIT3179 Data Visualisation 2

# OPERATION

## 1) Tooltip feature

↳ displays detailed information when the user hovers over a specific data point, bar or state

## 2) Zoom feature

↳ allows users to zoom in or out of a visual to focus on specific regions or clusters

## 3) Highlight feature

↳ visually emphasises the selected or hovered data items while dimming others

## ④ Filter (in choropleth)

↳ allows users to focus on East Malaysia or West Malaysia

# FOCUS

The visualisation shows the economic inequality and living standards across Malaysian state in the year 2022.

- ① The choropleth shows the spatial distribution of income across Malaysia's state, such to reveal where regional inequality patterns happen.
- ② The boxplot visualizes the distribution of median household income across the two regions of east malaysia and west malaysia, such to also allow users to compare regional income spread.
- ③ The histogram displays the distribution of median household income across all Malaysian states such to see how many states fall within each income range to reveal clustering and inequality at a national level.

# DISCUSSION

## 1) Advantages

↳ strong spatial context to allow viewers to view regional patterns

↳ boxplot allow identification of income outliers

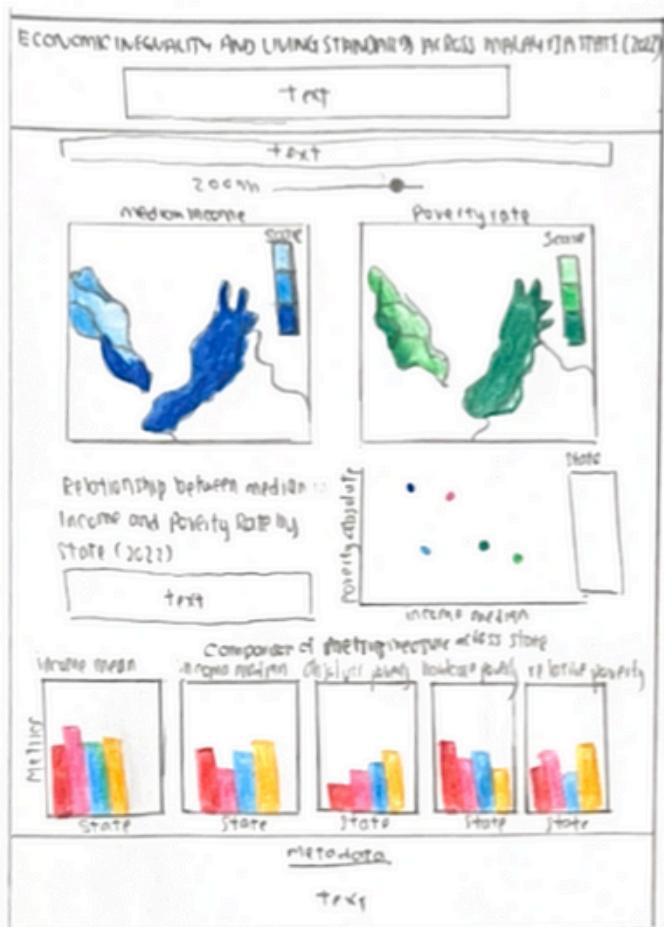
## 2) Disadvantages

↳ These visuals show distribution but not relationship between income and poverty

↳ with only 16 states, histogramming may appear sparse

# AYOUT

- \* Choropleth is used in more than one sheet due to requirements



Title: Economic Inequality and Living Standards across Malaysian States (2022)  
 Author: Rachelle Yap Zen Yi  
 Date: 19 October 2023  
 Sheet: 4  
 Task: FIT3179 Data Visualization 2

## OPERATION

### 1) Tooltip Feature

- ↳ displays detailed information when the user hovers over a specific data point, bar or state

### 2) Zoom feature

- ↳ allows users to zoom in or out of a visual to focus on specific regions or clusters

### 3) Highlight feature

- ↳ visually emphasizes the selected or hovered data items while dimming others

## FOCUS

The visualization shows the economic inequality and living standards across Malaysia states in the year 2022.

- ① The choropleth map on the left shows the median household income by state such to highlight spatial income inequality
- ② The choropleth map on the right shows the absolute poverty rate by state such to provide a geographic view of deprivation to contrast against the income map
- ③ The scatterplot explores the relationship between median income and absolute poverty such to be able to quantify the correlation visually and to detect anomalies
- ④ The small multiple dimensions show the metrics side by side for each state to allow viewers to compare across metric type simultaneously

## DISCUSSION

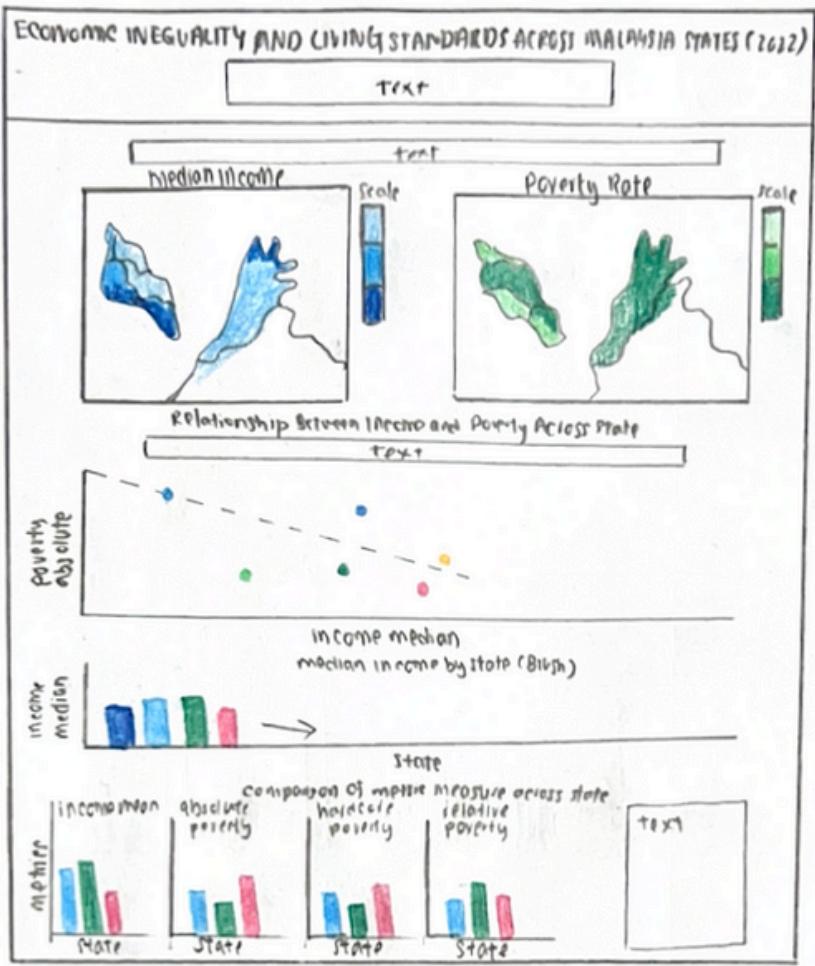
### 1) Advantages

- ↳ clear correlation between income and poverty
- ↳ visualization consist multi-layered storytelling that offers complementary perspectives

### 2) Disadvantages

- ↳ visual hierarchy and visual structure should be highly considered to avoid over complexity

# AYOUT



# FOCUS

The visualisation shows the economic inequality and living standards across malaysian state in the year 2022.

- ① The choropleth map on the left shows the median household income by state such to highlight spatial income inequality.
- ② The choropleth map on the right shows the absolute poverty rate by state such to provide a geographic view of deprivation to contrast against the income map.
- ③ The scatterplot explores the relationship between median income and absolute poverty such to be able to quantify the correlation visually and to detect anomalies.
- ④ The bar chart with brush rank states by median household income and acts as a filter control for the dashboard.
- ⑤ The small multiple dimensions show the metrics side by side for each state to allow viewers to compare across metric-type simultaneously.

Title: Economic Inequality and Living Standards across Malaysia States (2022)  
Author: Rachelle Yap Zen Yi  
Date: 19 October 2023  
Sheet: 5  
Task: FIT3179 Data Visualisation 2

# OPERATION

## 1) TOOLTIP

- ↳ Hover over a specific data point, bar or state to view displayed detailed information

## 2) ZOOM FEATURE

- ↳ Allow users to zoom in or out of a visual to focus on specific regions or clusters

## 3) HIGHLIGHT FEATURE

- ↳ Visually emphasises the selected or hovered data items while dimming others

## 4) BRUSH (FILTER)

- ↳ Allow users to drag to select a subset of state

# DETAIL

## Dependencies

- 1) R code
- 2) VS Code (HTML, JSON, TopoJSON)
- 3) Data from OPEN DATA, data.gov.my
  - ↳ poverty by state
  - ↳ income by state

## Estimated time and effort

- 1) 5 days for preparing dataset and creating visualisation