# 1. Ideas

Grouped bar chart



Area chart



Line chart



Donut chart



Likert scale rating

m : m ———•——— m

m : m ———•——— m

m : m ———•——— m

1  2  3  4  5

Stacked bar chart



Scatter plot



Symbol map



Choropleth map



# 2. Filter

① Donut chart can be visualised better in regular bar chart or area chart, so remove it.

② Based off datasets collected, a bubble plot will probably benefit more due to continent data and also having one more quantitative attribute to be visualised.

③ Choropleth map will probably be more suitable since proportional symbol can cause circles to cluster and block each other in regions with many small countries like Europe. . . . . . .

# 3. Categorise

① Likert scale rating can be used to show means for answers to a questionnaire.

② Line chart and area chart can be used to show trends over time for a quantitative attribute.

③ Symbol map can be used for datasets with geographic attributes (e.g. countries) with a quantitative attribute.

④ Grouped bar chart and stacked bar chart can be used to show proportions of different constituents for a nominal attribute

⑤ Scatter plot can be used to show the relationship between two quantitative attributes.
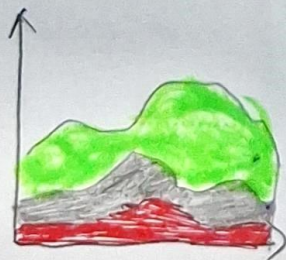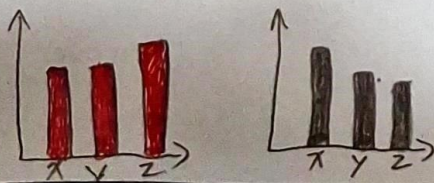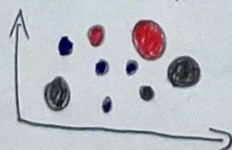
# 4. Combine and Refine

① Area chart + stacked bar chart = stacked area chart



② Separate grouped bar chart = multiples (for better clarity)



③ Scatter plot + symbol map = bubble plot



"small

# 5. Question

① Can the visualisations show relationships between different economic indicators (e.g. GDP, Gini coefficient, unemployment rate)?

② Can the visualisations show trends in economic indicators like employment and unemployment rate?

③ Can the choropleth map show clear distinctions between different data classes?
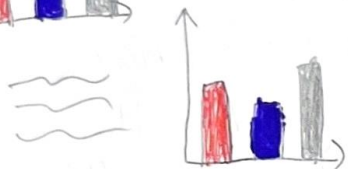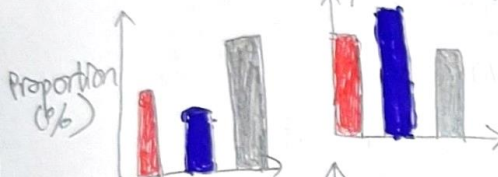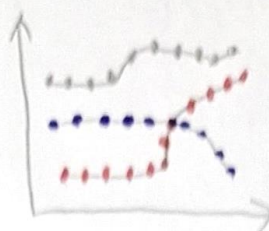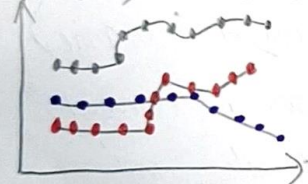
Layout

(Main title)

(Title 1)
GDP



Unemployment rate



Gini coefficient

(Title 2) Employment sectors

Proportion (%)



(Title 3) Mentor Health Indicators



Click 'Indicator 1'
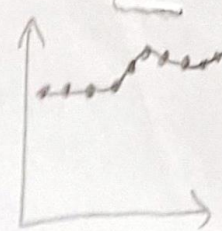
| Show all | ⌄ |
| Indicator 1 | |
| Indicator 2 | |
| Indicator 3 | |

| Indicator 1 | ⌄ |



Unemployment rate

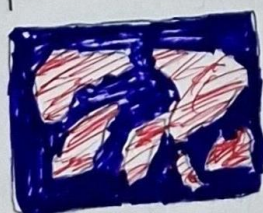Gini coefficient

Brush horizontally
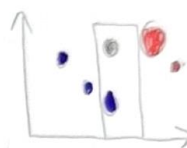




Bubble graph filtered
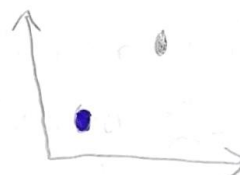
Focus

- Filtering via selection menu for choropleth and multi-line chart.

- Brushing for choropleth map and bubble chart to coordinate values.

Operations



click '200 Billion'



| 200 Billion | ⌄ |

| 0 Billion | ⌄ |
| 10 Billion | |
| 50 Billion | |
| 100 Billion | |
| 200 Billion | |

Discussion

+ Filtering available to show user details they want to narrow down on.

- Filtering by continent will probably be more useful for the bubble chart.

- Brushing can be hard to use for the bubble chart if the bubbles are clustered and stack on top of each other.

Meta-Information
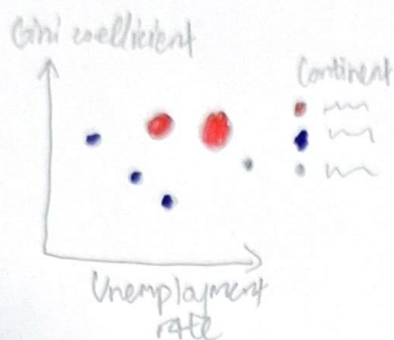Title: Standard view
Author: Chong Wei Zhe
Date: 29/9/2025
Sheet: 2
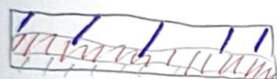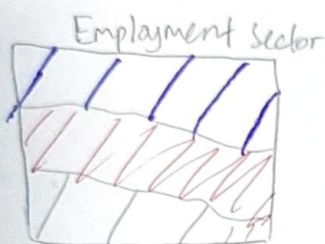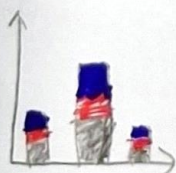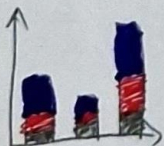Task: Finding impact of economic factors on mental health

Layout

(Main title)

(Title 1)

Gini coefficient



Unemployment rate

(Title 2)

Employment sector



Unemployment rate

Year

(Title 3)

Mental Health Indicator

No    Maybe   Yes

Mental Health Indicators
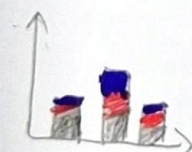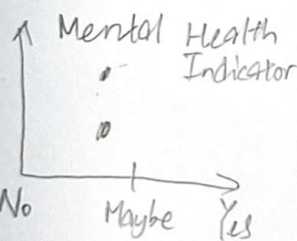


Suicide rate



Focus

- Have a logical flow from top to bottom, having similar visualisations together to minimise distractions for the user.

- Visualisations are split into economic factors at the top half and mental health at the bottom half.

- The use of small multiples adds cohesiveness and allow users to compare between the visualisations easily instead of squeezing all into one bar chart.

Operations



Brush horizontally on middle chart

Drag slider to the right

0                    15

Discussion

+ The visualisations are more organised when grouped into sections
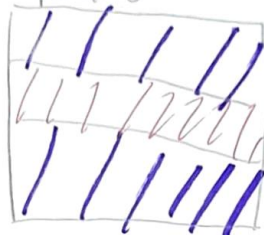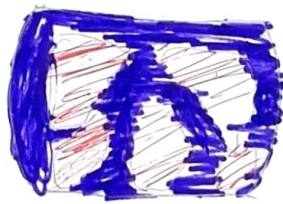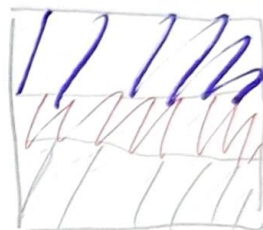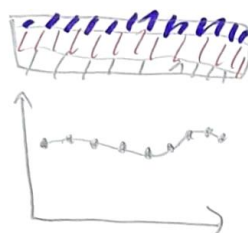
+ there is more variety in the visualisations which makes them more engaging.

+ The slider filter allows more fine-tuning ability for the user to control the level of details.

- The user may have to scroll up and down a lot to compare visualisations at the top and bottom since the visualisation is rather long.

Meta - Information
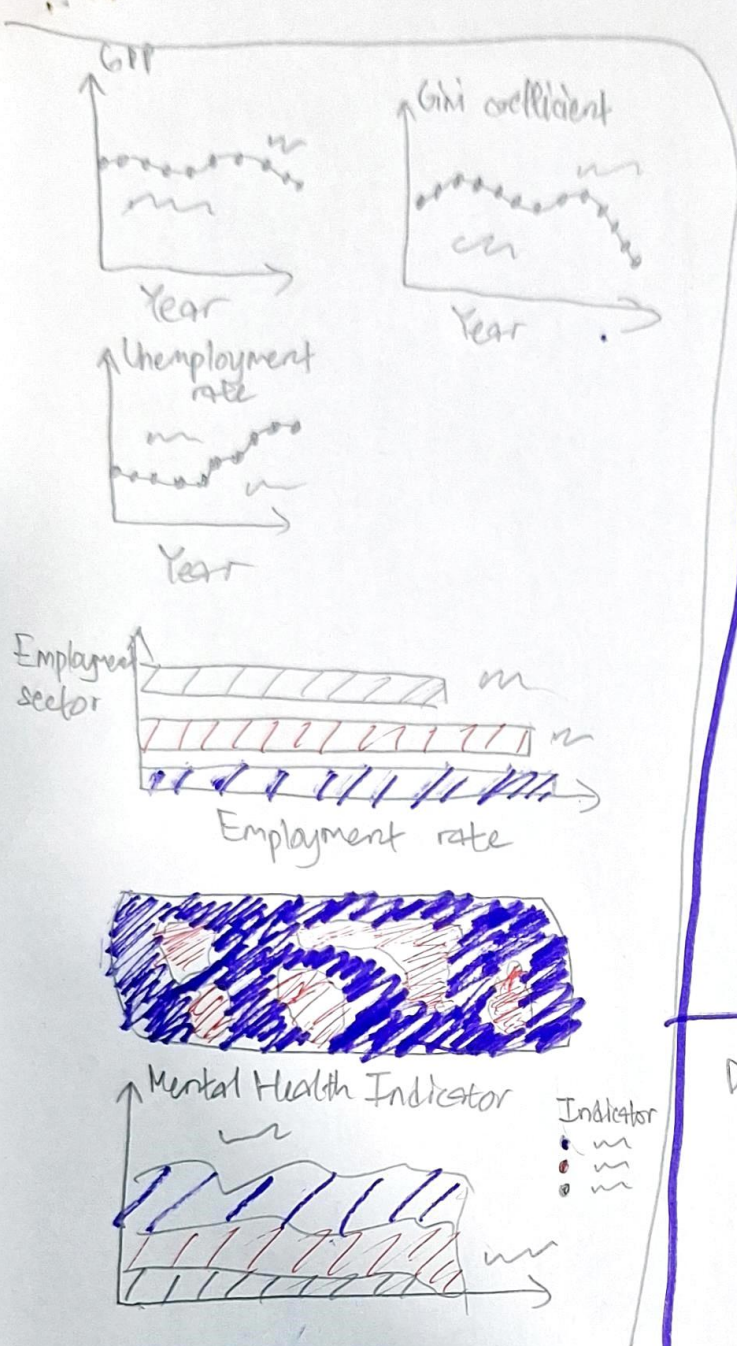Title: Long sectioned view        Sheet: 3
Author: Chong Wei Zhe             Task: Finding impact of
Date: 29/9/2025                          economic factors on
                                                  mental health

## Layout

GDP — Year graph

Gini coefficient — Year graph

Unemployment rate — Year graph

Employment sector — Employment rate bar chart

(choropleth map sketch)

Mental Health Indicator graph with Indicator legend

GDP — Year graph

Gini coefficient — Year graph

Unemployment rate — Year graph

(choropleth map sketch)

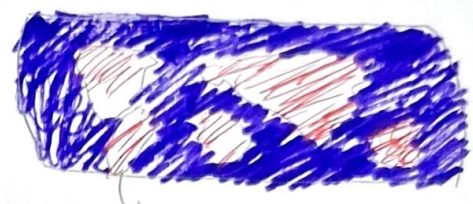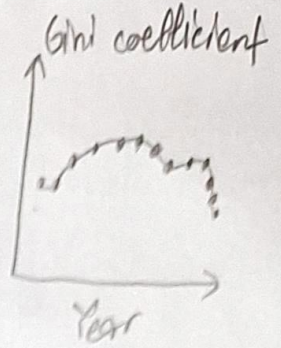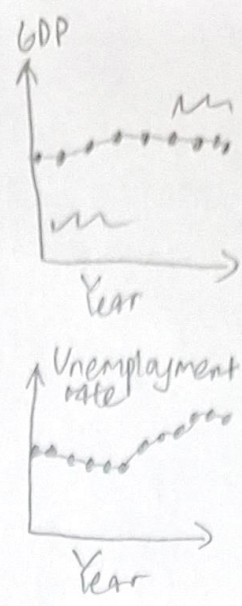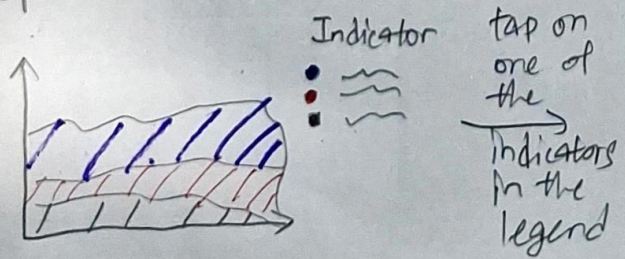tapping on a country on the choropleth map shows the GDP, Gini coefficient and unemployment rate in the top three graphs.

## Focus

- Visualisations will contain annotations which prevents the need for paragraphs to explain the visualisations at the side.
- Visualisations are stacked vertically one after the other without paragraphs or unnecessary titles to allow smooth reading for the user.

## Operations

Indicator legend — tap on one of the Indicators in the legend

Indicator legend graph

## Discussion

+ Visualisations have ample space since some visualisations take up the entire width of the page.
- Having only text annotations may still make readers confused due to the lack of sectioning; users are forced to jump into the visualisation immediately.
- Having text annotations may clutter the visualisation and prevent white space from benefitting the visualisation. This is rejecting layout principles.
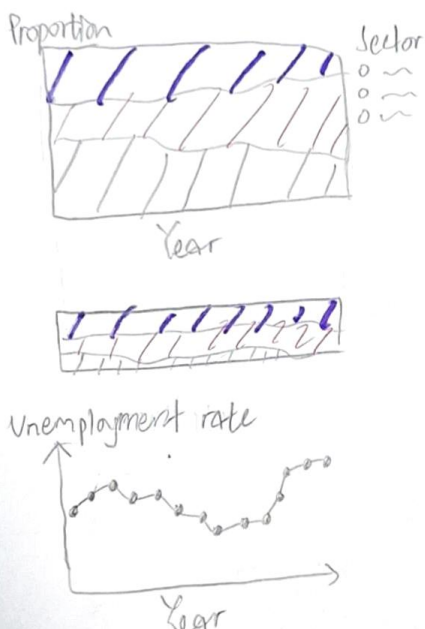
# Layout
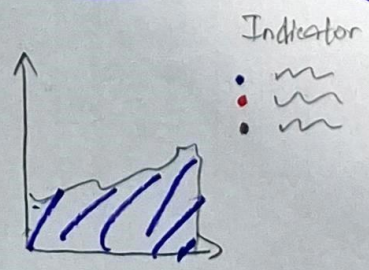
## Impact of Economic Factors on Mental Health
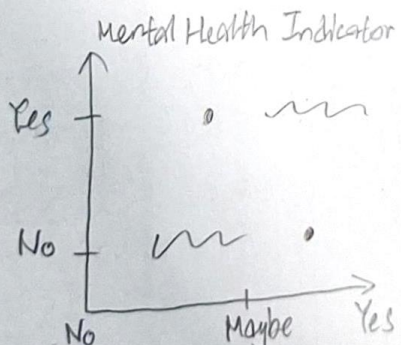
(name)
(date)

Relationship between
Gini coellicient, unemployment
rate and GDP



Minimum GDP [0 ▾]

Employment in Malaysia





Mental Health



Indicator 1



Indicator 2
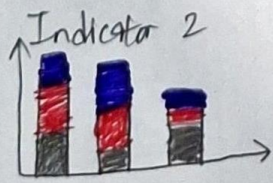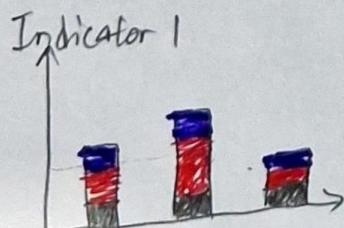


Suicide
Rate



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# Focus

- The design and visualisations were chosen from sheet 3, with filters and titles chosen for datasets to visualise.

- Visualisation is sectioned in two, the top half focuses on economic factors while the bottom half shows its impact on mental health.

- Interactive elements include a selector to filter the GDP, continent legend filter to filter according to continent and a slider filter to filter the suicide rate. The small visualisation of the area chart is used for the purpose of horizontal brushing, where the top area chart and bottom line chart will filter accordingly.

## Operations



hovering over bar shows tooltip

Click on the red continent in the legend



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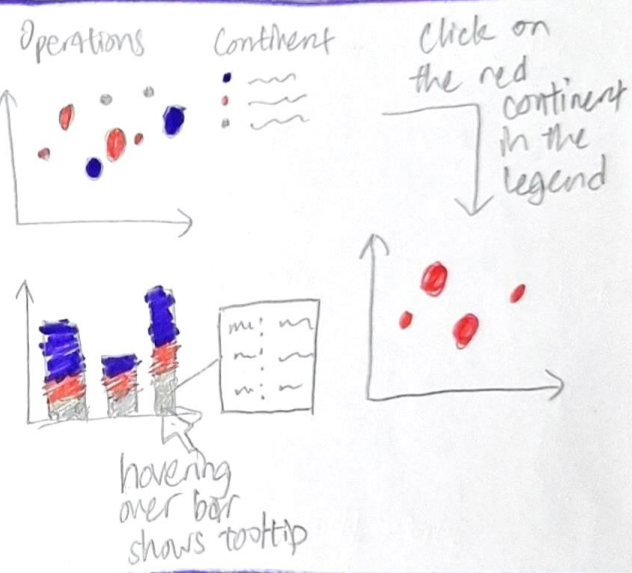
# Detail

- Vega-lite will be used in tandem with html, CSS and JavaScript to produce the visualisation.

- Each section is expected to take a day. Since there are two sections, two days will be needed for the visualisation. Another 5 hours will probably be needed to create the webpage.

- The size of the visualisation is expected to be around the size of an A4 paper, without its length fixed.

## Meta-information
Title: Final version of visualisation
Author: Chong Wei Zhe
Date: 30/9/2025
Sheet: 5
Task: Impact of economic factors on mental health