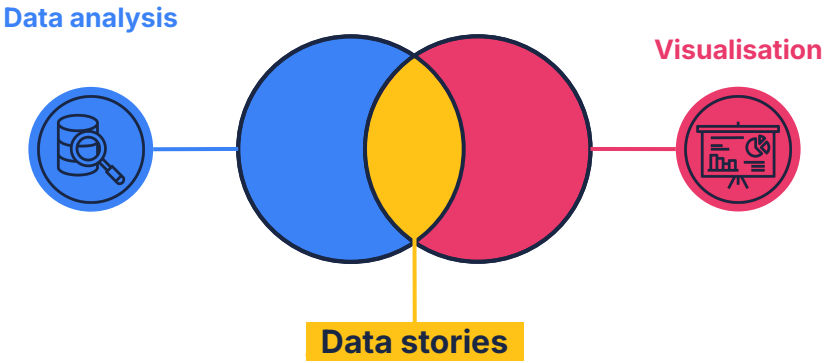
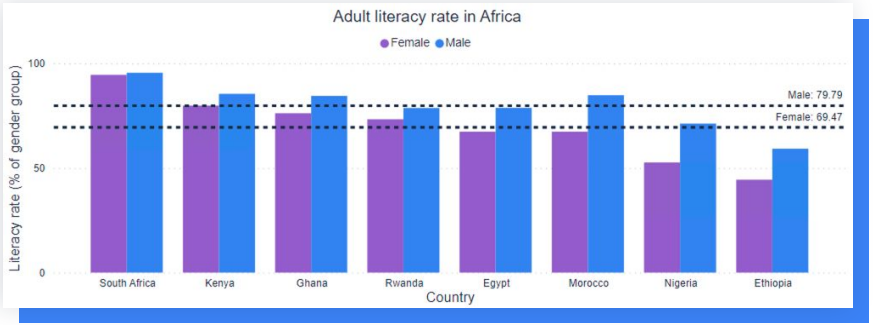
Visualisations in data stories

We already know that **stories make data relevant**.



We also know that **visualisation makes data more accessible** than something more text-driven.



But, how do we make sure that we get it right? **How do we create and use visualisations that support our story and data** rather than detract from it?

Design for impactful communication

When are visualisations successful?

According to an expert*, **visualisations are successful when it**:

Has a clear **purpose**.

Includes only relevant **content**.

Has appropriate **structure**.

Has useful **formatting**.

These are **the four pillars of effective communication design**.

*The expert we're referencing in this case is Noah Illinsky, a former AWS and IBM UX (user experience) architect.

Design for impactful communication

The four pillars of effective communication design

Why is it called the **four pillars of effective communication design** and not simply four pillars of effective **visualisation**?

By shifting the focus to **communication design** we are recognising that effective design principles are not limited to data visualisation alone.

Effective design principles can and **should be applied to all forms of visual communication**, such as text and multimedia, to ensure that we are communicating with impact.

The four pillars: Purpose

> This pillar addresses the fundamental question of **why a particular visualisation (or design) is being created**. Understanding the purpose helps guide the design process by **clarifying the goals and objectives**.

The WHY

Why are we creating this visualisation?

Purpose dictates the deliverable, i.e. the result or output is ultimately determined by its purpose.

Why is it intended for this particular audience?

Why do they need to understand it?

Why is this information significant?

Why will it be consumed in this particular way?

The four pillars: Content

> Content refers to what information or data is being visualised or communicated. It involves determining the **key elements and details that need to be presented** effectively.

The WHAT

What data matters?

The content is informed by the purpose, i.e. if we don't know what the purpose is, we won't know what to visualise.

What is the context?

What story does the data tell?

What relationships matter?

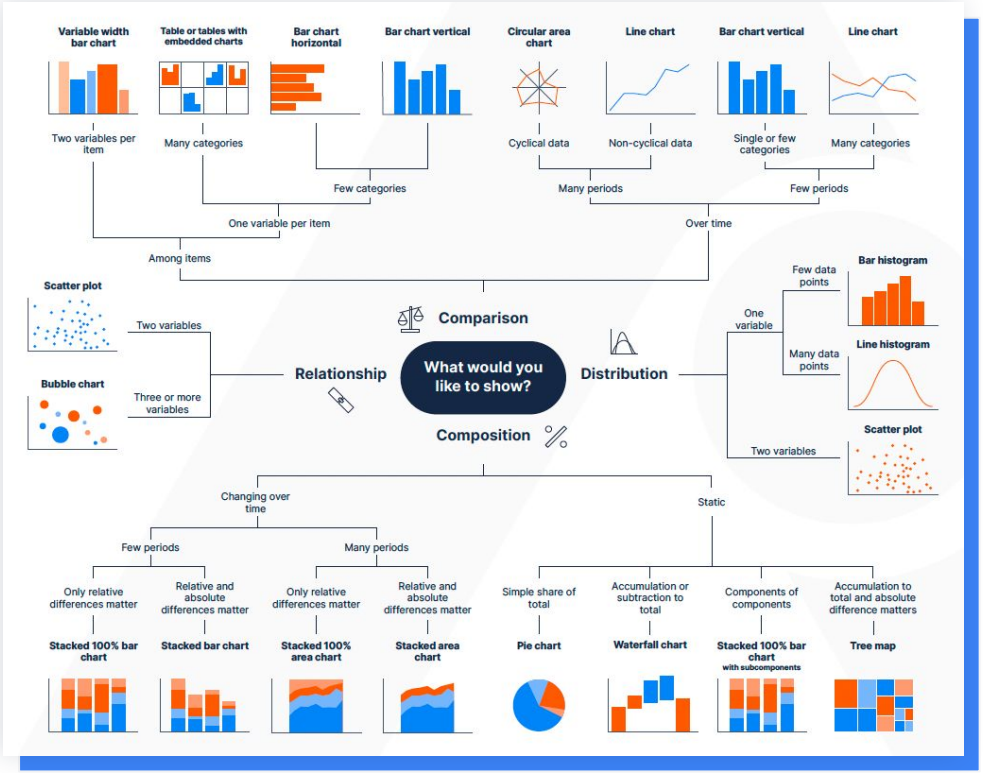
What should be included and/or excluded?

The four pillars: Content

Finding the right way to visualise data is as much an art as it is a science.

Luckily, if we **know the purpose**, we can **use the four visualisation categories** to guide us in finding the right type of visualisation.

Remember, the visualisation we choose will depend on the **purpose**, the **data** we have available, and the **story** we want to tell.



The four pillars: Structure

> Once we know the purpose and content, the structure pillar helps us **decide how to organise and represent** the information. This includes choosing the right layout, hierarchy, and relationships between elements.

The HOW

How do we best show the most important data and relationships?

Structure is informed by both the purpose and content.

How do we arrange the data for a logical flow?

How do we balance simplicity and complexity?

How do we make the layout effective?

How do we make the axes meaningful?

The four pillars: Formatting

> Formatting encompasses **all the design elements that enhance** the presentation or visualisation, such as colour, typography, spacing, and other visual aspects that make the communication **more appealing and understandable**.

Everything else

How should it look and feel?

Formatting is informed by the purpose, content, and structure.

How will it be consumed?

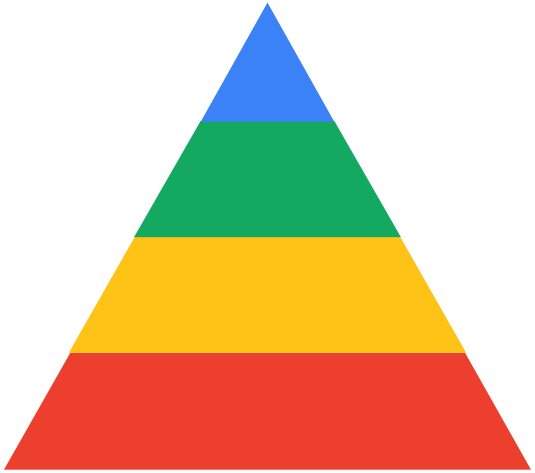
Is it **functional** and **accessible**?

Does the design support **clarity**?

Does the design support the **insights**?

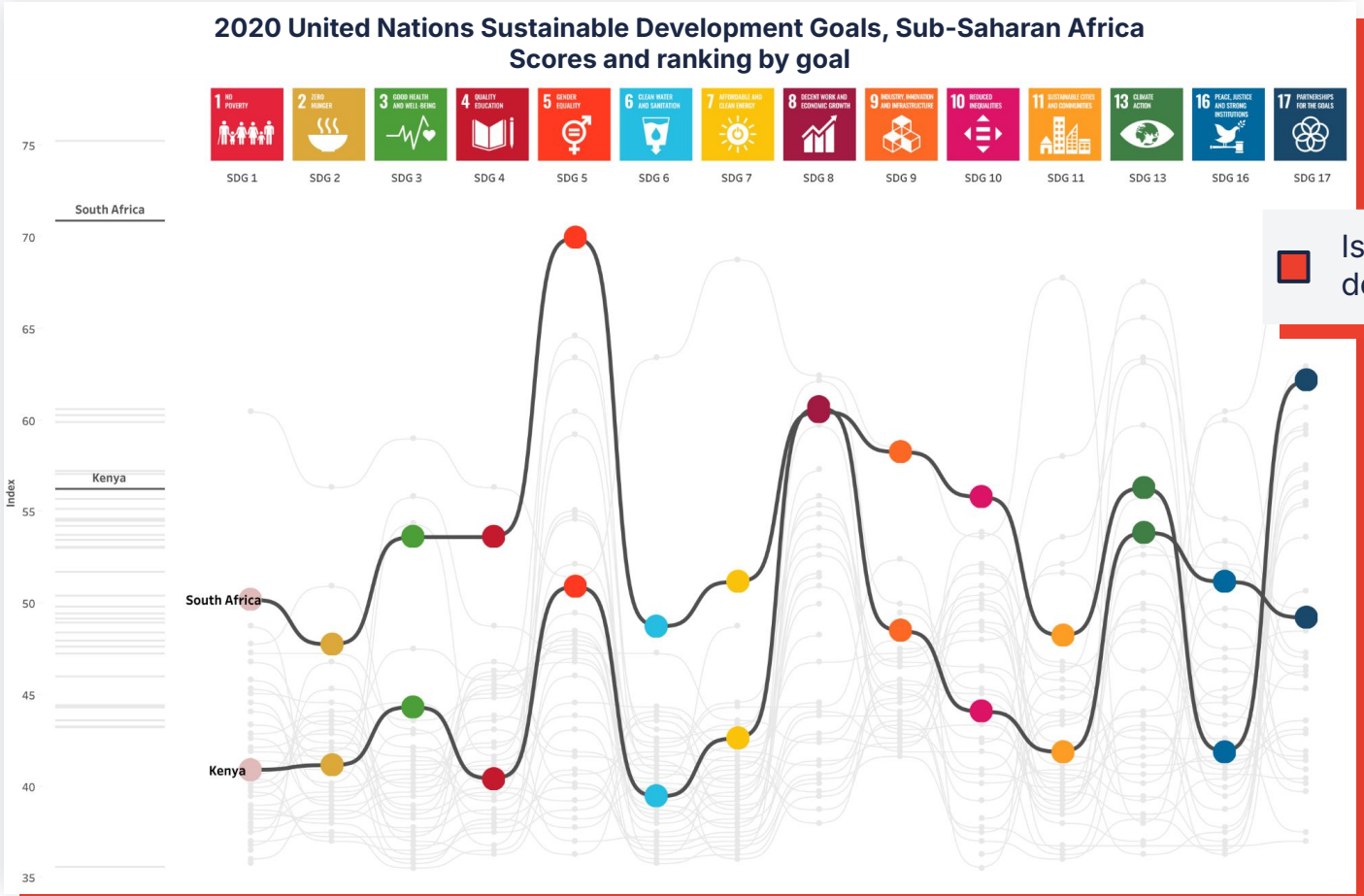
The four pillars checklist

Although we have to consider many things to ensure a visualisation is successful, it comes down to **four important questions** that we can use as a checklist.



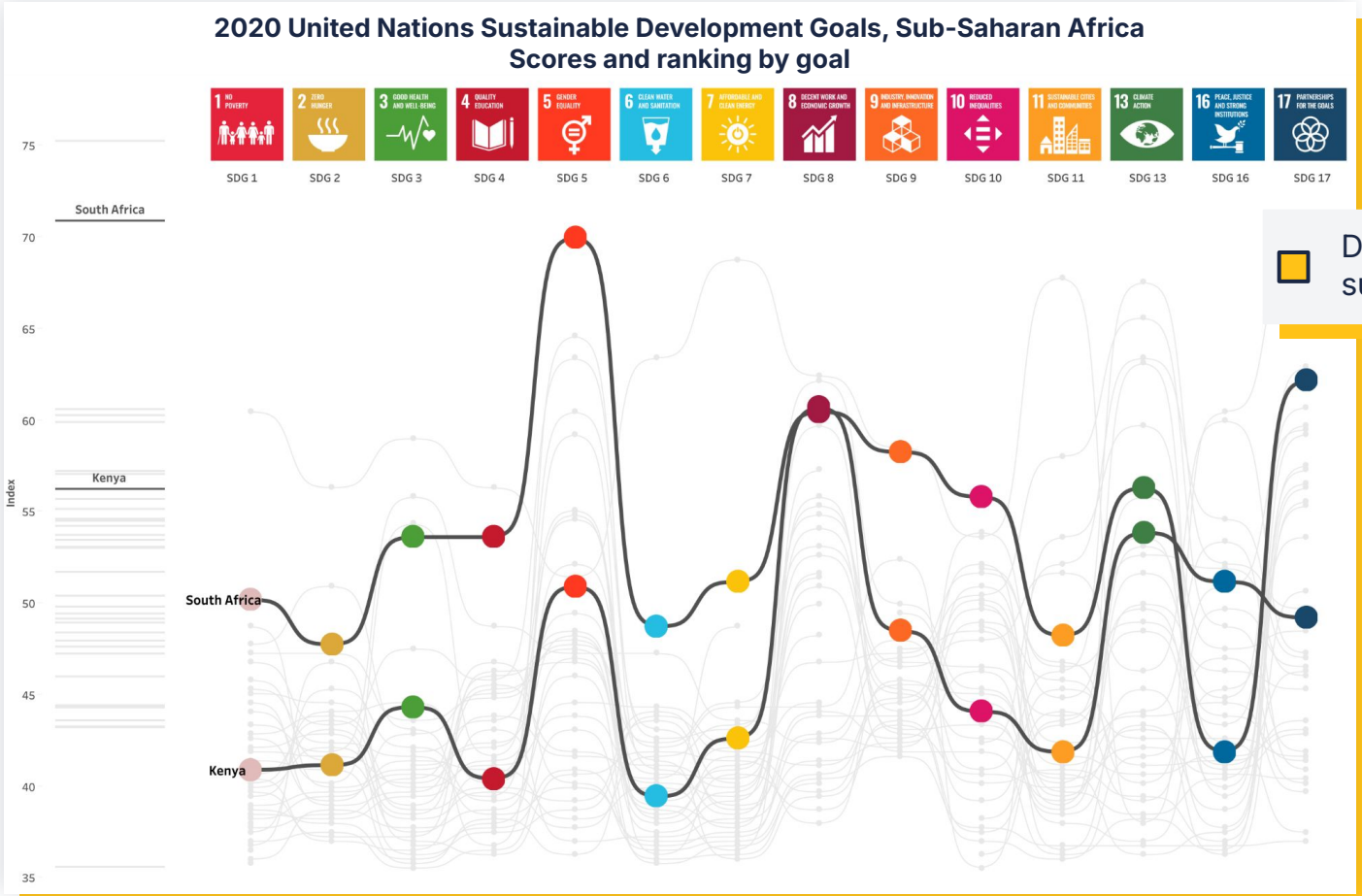
- Does the **formatting** support understanding?
- Does the **structure** reveal the content?
- Does the **content** support the purpose?
- Is the **purpose** well-defined?

Each question builds upon the previous one. This approach ensures that the design process is **rooted in a clear and well-defined purpose** and design elements are **progressively refined to support the purpose effectively**.



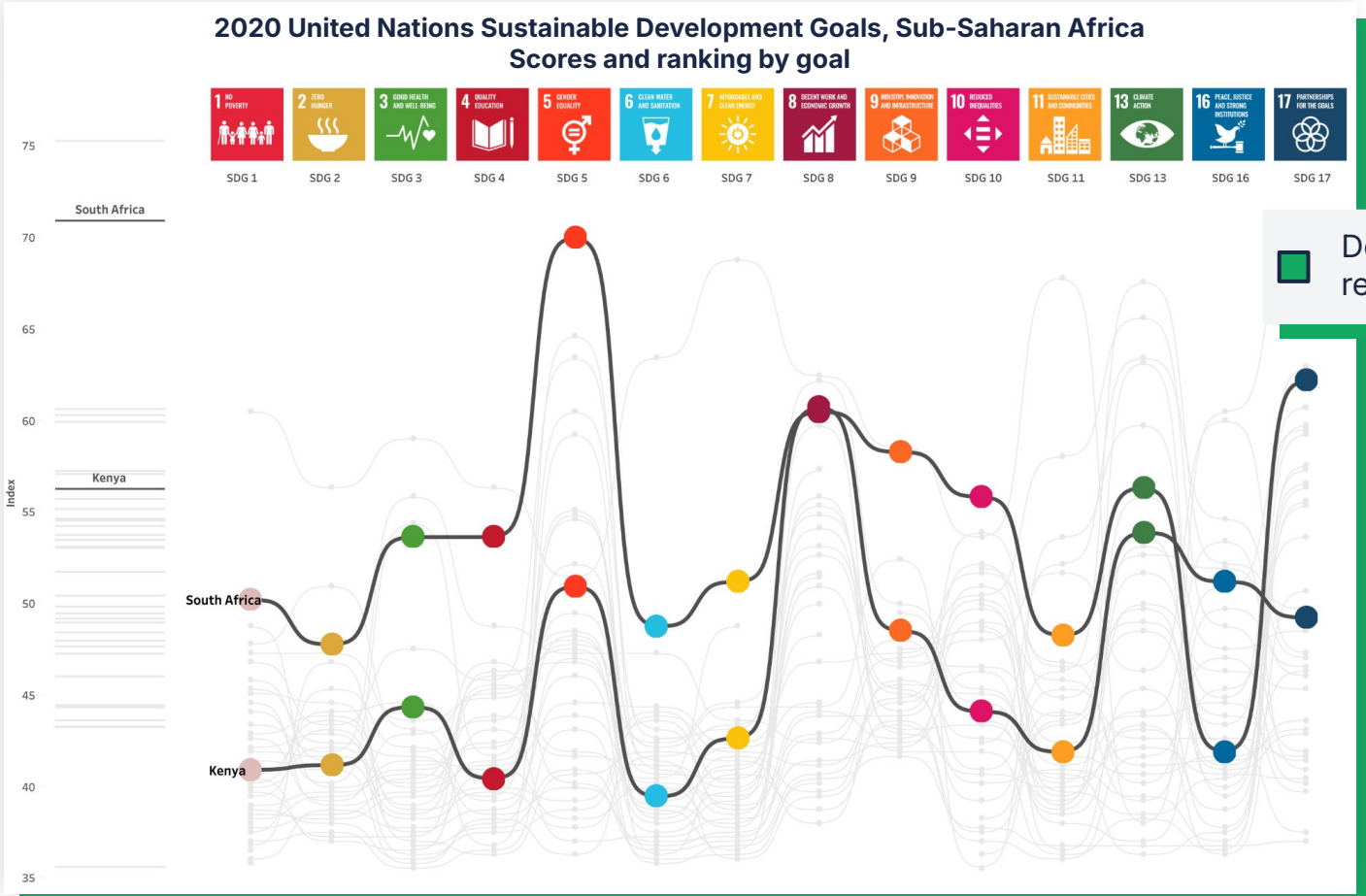
Is the **purpose** well-defined?

- Comparing how South Africa and Kenya's SGD goals tracked against other Sub-Saharan African countries in 2020.
- An overview of the UN SDG goal scores and ranking for Sub-Saharan African countries in 2020.



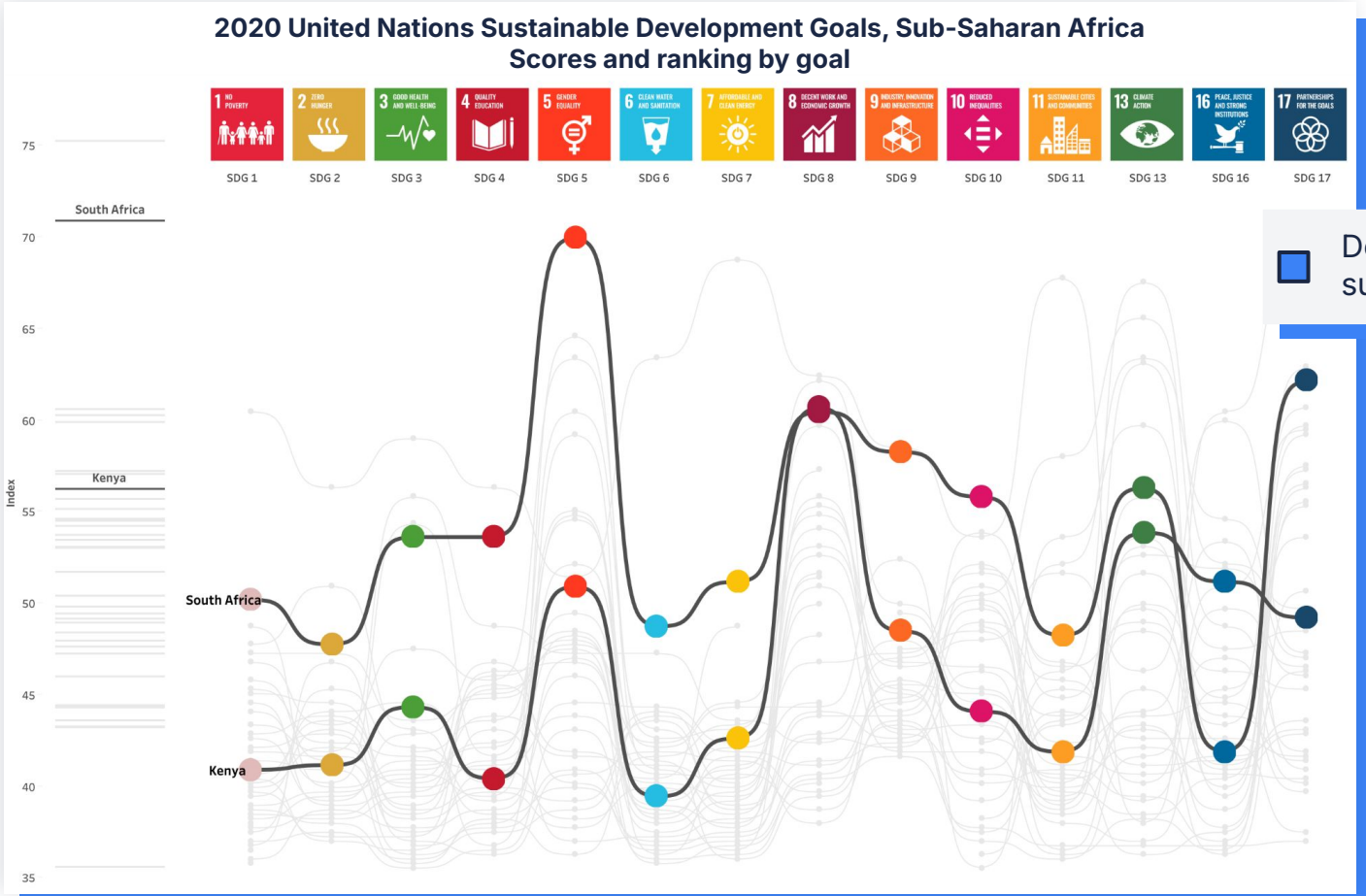
Does the **content** support the purpose?

- Only the data for Sub-Saharan African countries are included.
- A comparison chart (although usually used over time rather than amongst items) is used to compare South Africa and Kenya's scores, and against the region.



Does the **structure** reveal the content?

- The goals are ordered.
- The axes are labelled and scaled appropriately.
- Although the lines are annotated at the first point, it's hard to follow which line represents which country when they start to overlap.



Does the **formatting** support understanding?

- The data points are generally the same colour as the official UN SDG, making it easier to interpret which goal we are considering.

Discussion: UN SDGs for Sub-Saharan Africa example

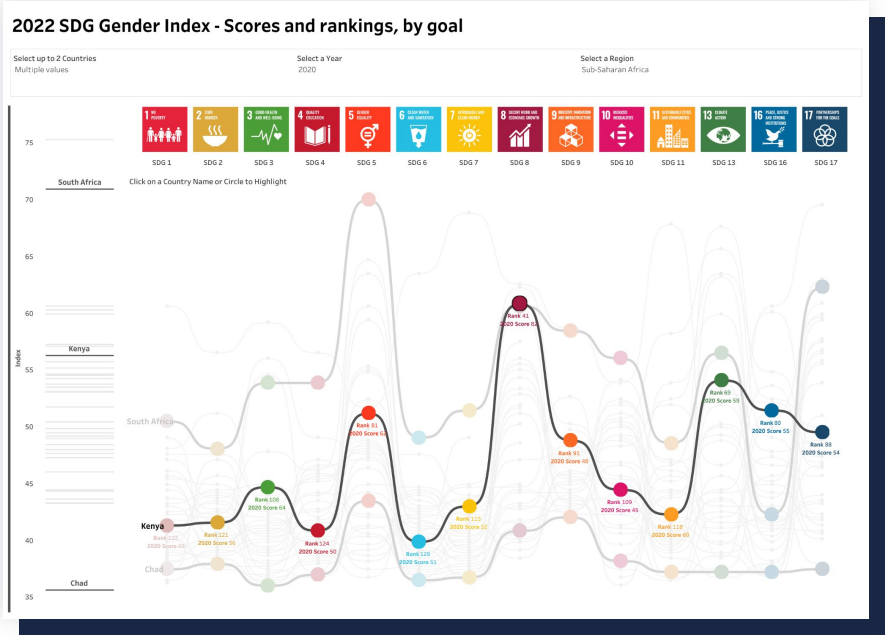
While we found the **static image** provided in the previous few slides **quite effective**, we did pick up one issue related to the structure pillar:

- *Although the lines are annotated at the first point, it's hard to follow which line represents which country when they start to overlap.*

Here's the caveat, we **never stated or thought how this visualisation is actually going to be consumed**, i.e. how people will view and/or interact with the visualisation.

The provided visualisation is actually an **interactive visualisation**, which allows us to select different regions, countries, and even a specific country to bring up additional information on that country's data points.

Our original concern has therefore been resolved by considering the way that it will be consumed.



Visit this page to see and interact with the original report.

What other issues do we pick up on the original report?