

Communicating Economics - Tutorial Plan 4 'Data Visualisation Workshop'

Duration: 50 minutes



Tutorial description:

Data visualisation is a key tool for economists to communicate with non-economists. The work for this tutorial consists of two parts:

1. Use Microsoft Excel to complete Parts 1.1, 1.2, and 1.3 of [Chapter 1: Measuring climate change](#) in *Doing Economics*. Put all the graphs/charts you generate into a single Microsoft Excel file, and post this to the tutorial discussion on Canvas.
2. Find two examples of economics-related data visualisations published in the past year: one should be an example of a good data visualisation, which you think is informative and works well; the other should be an example of a bad data visualisation, which is poor at communicating its message. Include each example on a separate PowerPoint slide, including a brief commentary on why you chose each data visualisation, and upload this to the tutorial discussion on Canvas. Be prepared to discuss and justify your choice in class.

Further reading

Tipoe, E. and Becker, R. (2018), *Doing Economics*. Available at: <http://www.core-econ.org/doing-economics/>

Learning outcomes

By the end of the tutorial students should be able to:

1. Understand how to design a data visualisation that communicates an economic message clearly to a specified audience.
2. Critically evaluate the strengths and weaknesses of different data visualisations.
3. Explain and justify design decisions in terms of communication rather than aesthetics.
4. Recognise common pitfalls in economic data visualisation.
5. Provide constructive feedback on peers' visualisations.

Student preparation before the tutorial

Students should have:

- Completed the *Doing Economics* exercise and posted this to Canvas.
- Selected one example of an effective economics data visualisation
- Selected one example of an ineffective economics data visualisation.
- Included both on separate PowerPoint slides with a brief commentary for each.
- Uploaded the completed presentation to Canvas.

Tutorial structure

Time	Activity	Purpose
0-5 min	Introduction and overview	Set expectations
5-15 min	Purpose of data visualisation	What makes a good visualisation?
15-30 min	Designing a data visualisation	Identify and understand common problems
30-45 min	Students' examples	Critically evaluate examples of good & bad data visualisations
45-50 min	Summary and reflection	Consolidate learning

0-5 minutes

Introduction and overview

- Display the opening slide with the tutorial description and briefly remind students of the exercise.
- Introduce today's workshop by reminding students that economists communicate with a wide range of audiences.
- Explain that producing good analysis is only part of an economist's job. Equally important is communicating that analysis clearly to policymakers, businesses and the public.

5-15 minutes

Purpose of data visualisation

- A visual tool can have three purposes:
 - Help structure a talk
 - Convey complex information
 - Help people remember
- Provide an overview of the process of creating a data visualisation:
 - Why use visual tools? What are we trying to achieve?
 - When should we use visual tools? When are they an unnecessary distraction?
 - How should we use visual tools? How can we design meaningful visual tools?
 - How do we create visual tools? What process/software should we use?
- Emphasise that two questions should guide every step of the design process:
 - What is your key message?
 - Who is your audience?

15-30 minutes

Designing a data visualisation

- Students work in small groups of two or three.
- Using the provided example of a poor data visualisation (below), students should discuss the following three questions within their groups:
 1. What is the key message of this data visualisation?
 2. What do you think of this data visualisation?
 3. Which aspects are poorly designed?
- After 5 minutes, bring the groups together and discuss their answers to each question in turn, focusing most time on discussing groups' answers to Q3.



Source: With thanks to Rachel Griffith.

30-45 minutes

Students' examples

- Students now present and discuss the examples they selected before class.
- Rather than asking everyone to present, invite several students to briefly introduce either:
 - an excellent visualisation, or
 - a poor visualisation.
- As needed, prompt the students from the following list:

Good example	Poor example
What makes it effective? Consider: • Title • Chart choice • Colour • Annotations • Simplicity • Storytelling	What makes it ineffective? Possible issues include: • Confusing title • Missing labels • Misleading axes • Chart clutter • Excessive colours • Poor font size • Unnecessary legends • Inappropriate chart choice

- After each example ask the class, "If you had five minutes to improve this visualisation, what would you change first?". Tutor prompts include:
 - Why choose this type of chart instead of a different one?
 - Could the message be communicated more simply?

- What draws your attention first?
 - Does colour add meaning or create distraction?
 - Is anything unnecessary?
- Emphasise that there is rarely a perfect visualisation and that good design often involves balancing competing priorities.

45-50 minutes

Summary and reflection

- Finish by highlighting four key principles.
 1. Start with the message: before creating a chart, decide exactly what you want your audience to learn.
 2. Design should support communication: every design choice should help the audience understand the message more quickly.
 3. Less is often more: removing unnecessary information usually improves clarity.
 4. Good economists communicate visually as well as numerically: an effective visualisation enables readers to understand the key finding without reading a lengthy explanation.

Conclude with an exit question:

"What is one design principle you will use the next time you create a graph?"

Invite two or three responses before ending the session.

Post-Tutorial

Provide brief feedback to students on their data visualisations created for part 1 of the tutorial exercise. Highlight what was done well and where improvements could be made, referring back to the material covered in the tutorial.