STATISTICAL GRAPHICS (STAT7123/8123)
*School of Mathematical and Physical Sciences*
*Faculty of Science and Engineering*

MACQUARIE
University

## STAT7123/STAT8123 Assessment Task 1:     Interpreting and Critiquing Statistical Graphics

### Submission details
Weight: 25%
Due Date/Time: 11:55pm Friday 18th August 2023
Submission via: the link in iLearn to Turnitin (in PDF or Word format)
Formatting details
- No more than 5 pages, one page per graphic (including the graphic)
- Graphic should take no more than ¼ of the page (we can see large images through the URL)
- Font: 10pt or larger
- Referencing style: Vancouver style (https://libguides.mq.edu.au/referencing/Vancouver)

Late Penalties: Standard Late Penalty applies (see the unit guides/Assessments block of iLearn for details).

### Purpose
The purpose of this assessment is to provide you with the opportunity to demonstrate your ability to communicate your understanding of statistical graphics. This is a key capability in all professions whose role may entail explaining such graphics to non-experts.

### Outcomes addressed
This assessment addresses the following unit outcome/s:
ULO1: be familiar with important and contemporary examples of graphics and be able to use them.
ULO2: be aware of the elements of graphical design and use them to critically appraise presented graphics in articles and web pages and suggest appropriate ways to improve them.

### Skills assessed
Using the methods and tools described in Lectures and SGTAs, this task allows you to demonstrate: :
1. Your written communication skills
2. Your ability to critically evaluate statistical graphics

### Task overview
For this assessment, you will collect, interpret, and critique five statistical graphics collected from the source types outlined in the instructions below.

### Task details/specific instructions

1. Collect five (5) statistical graphics from any of the following online sources: news (e.g., The Australian Financial Review, The Australian, The Sydney Morning Herald), journal  (e.g., Nature, PLoS ONE) or magazine websites (e.g., New Scientist, Scientific American and The Economist)or the websites of businesses. **Do not** use images presented in class or from websites that collect images, such as Michael Friendly's. **Do not** draw your own graphics or get someone else to do so for you.

   The five required graphics are:
   **Graphic 1)**     A statistical graphic about the 2023 bushfires in Canada, Chile, Greece, or Spain.
   **Graphic 2)**     A choropleth/thematic map relating to sport.
   **Graphic 3)**     A statistical infographic (it must <u>contain statistical information,</u> such as charts and summary statistics) published within the last 2 years.
   **Graphic 4)**     A statistical graphic relating to business.
   **Graphic 5)**     A statistical graphic of your choice.

2. Critique and interpret each graphic using the format given in the proposed structure (next page).

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## Proposed structure

Each page (one per graphic) of your assignment must include:
    a. the graphic itself (taking up no more than ¼ of the page) and a URL for the graphic
    b. an accurate citation for that graphic using Vancouver style
    c. the reason that you chose the graphic (i.e. why this particular statistical graphic)
    d. a description/interpretation of what the graphic is showing (in your own words)
    e. critique of the graphic
        i. What tools were used to convey the message?
        ii. Which principles of graphics were used?
        iii. What are the strengths and weaknesses (if any) of the chosen graphic?

## Quality Criteria

A high-quality submission will:
1. Present graphics that meet all guidelines
2. Use accurate referencing for all graphics
3. Provide justification that clearly articulates why the graphic was chosen
4. Clearly articulate a detailed interpretation that precisely explains the main message(s) that each graphic is trying to convey.
5. Provide a detailed critique of each graphic that both describes all of the tools and design principles utilised in the graphic as well as explains what the strengths and weaknesses of the graphic are.
6. Use the structure given above.

The rubric below guides you to what we are expecting.

| Content | High Distinction | Distinction | Credit | Pass | Fail |
|---|---|---|---|---|---|
| **Images (5%)** | Meets all of the guidelines. | Meets almost all of the guidelines. | Meets most of the guidelines. | Meets some of the guidelines. | Meets none of the guidelines. |
| **Referencing (5%)** | Accurate Vancouver referencing including URLs. | Mostly accurate referencing including URLs | Some accurate referencing, some not | References provided but are not accurate. | No references provided. |
| **Reason (15%)** | Extremely well-justified, clearly articulated reason relevant to statistical graphics given. | Well-justified and articulated reason relevant to statistical graphics given. | Reason given but the relevance to statistical graphics is not always clear. | Reasoning is limited. Clear relevance to statistical graphics is needed. | Reasoning not provided or not relevant to statistical graphics. |
| **Description/ Interpretation (35%)** | Detailed and accurate description and interpretation. Key points are made clear. | Accurate description and interpretation. | The description and interpretation are generally accurate but there are gaps and some irrelevant details. | The descriptions and interpretations are limited and / or mostly irrelevant. | Little or no attempt to describe and interpret the graphic beyond the caption or interpretation is clumsy or wrong. |
| **Critique (40%)** | The critique demonstrates analytical depth and extensively outlines relevant tools, principles, strengths and weaknesses. | Analytically sound critique that outlines relevant tools, principles, strengths and weaknesses | The critique outlines relevant tools, principles, strengths and weaknesses but there are some gaps or irrelevant details. | The critique is limited but provides some relevant material. | The critique demonstrates a lack of knowledge or significant gaps and / or errors. |