Coursework 1 – Data Visualisation with Tableau (15%)

Tasks

Create visualisations in Tableau to analyse a given dataset

Dataset

- NCD_RisC dataset on BMI (Body Mass index), Diabetes, and Blood Pressure
- Available as a coursework attachment on the module page).
- There is no need to use all the attributes:
    - For BMI, focus on *Prevalence of BMI>=30 kg/m≤ (obesity)*, i.e., the percentage of obesity;
    - For Diabetes, focus on *Age-standardised diabetes prevalence*, i.e., the percentage of diabetes;
    - For Blood Pressure, focus on *Prevalence of raised blood pressure*, i.e., the percentage of high blood pressure.

Analysis goals:

- Is there any pattern for **each of the measurements**
    1. over time, and
    2. across different area?
- Is there any relationship **between two or three measurements**
    1. over time and
    2. across different area?

Submission

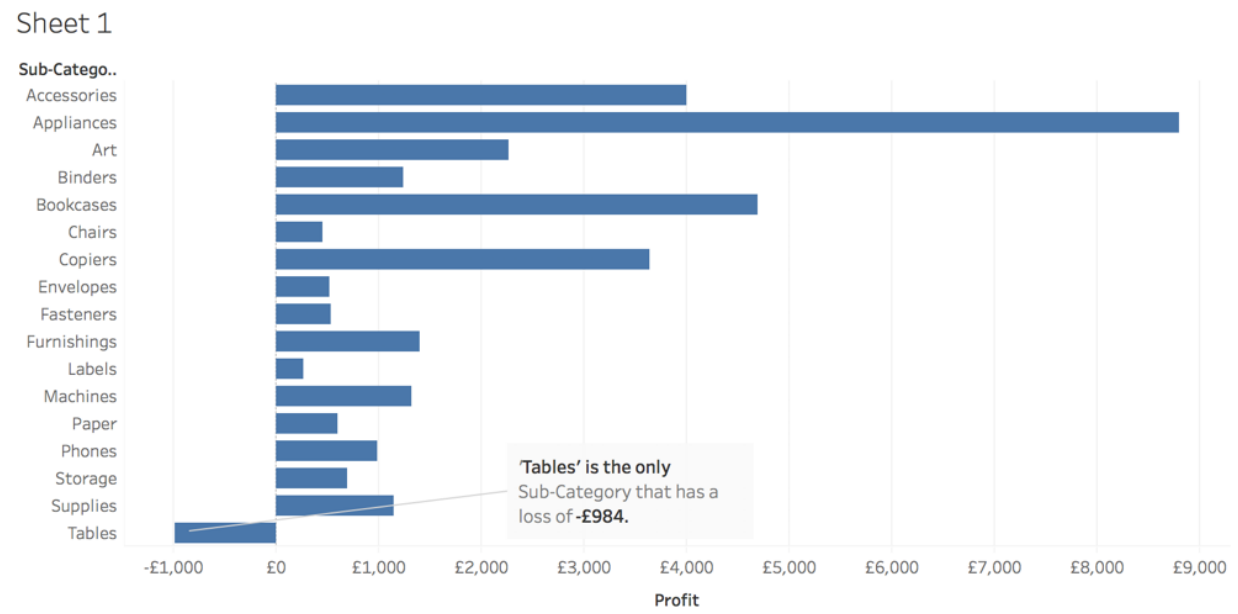
- One Tableau workbook (.twb file) with all the visualisations (see details below).
- There is no need to include the data in the submission.

Requirements

Design and create **three** visualisations in Tableau to present the **three types** of **non-trivial findings** that answer the analysis questions earlier:

- Each visualisation can be a work sheet, a dash board, or a story.
    - These need to be named **Finding 1**, **Finding 2**, and **Finding 3**, so they are clearly different from the result of tableau sheets.

- A **trivial finding** is one that is 1) obvious, 2) does not offer any insight into the data, and 3) can not be generalised
    - Example, the obesity level in UK is higher in 2010 than 2000.
    - **No mark for trivial finding.**
- The three findings need to be of **different type**
    - These two findings are of the same type: *the obesity level in UK increases from 2000 to 2010* and *the percentage of popular with raised blood pressure is decreasing from 2000 to 2010*.
    - **No mark for additional finding of the same type**.
- Use Tableau **Annotation** to present the findings (see the example below).
- Use Tableau **Caption** to discuss (see Week 4 & 5 lab sheet for example):
    - The ‘What’:
        - What is Dataset type, with justifications;
        - What is the Data type, with justifications;
        - What is the Attribute type, with justifications.
    - The 'Why':
        - What are the *Analyse*, *Search*, and *Query* for *Actions*, with justification;
        - What are the *Data* and *Attribute* for *Targets*, with justification;
    - The 'How':
        - What are the marks and channels and what data/attributes are mapped to them;
        - Why such visual mapping is effective for the given data (*what*) and analysis (*why*), e.g., are they using the most effective visual channels?
        - What are the alternative designs? Why will they be less effective?
        - Is there any Tableau feature, such as sorting or filtering, used to improve the visual design? Why is this effective?
    - For 'dashboard' and 'story', which do not have *caption*, discuss 'what', 'why' and 'how' in the caption of the sheets they use.



Caption

This worksheet is to identify the subcategory that has a loss. 'Profit', which is a quantitative attribute, is encoded with the bar length, which is the most effective channel for quantitative data.

Marking scheme

Each visualisation is 5 mark, so the total is 15 marks.

For each visualisation:

- The quality of the finding: 1 mark
  - Insightful finding receives higher mark
- 'What': 1 mark
  - **Dataset** type and justification
  - **Data** type and justification
  - **Attribute** type and justification
- 'Why': 1 mark
  - *Analysis* with justification
  - *Targets* with justification
- 'How': 2 marks
  - Mark and channels
  - Why they are effective
  - Discussion on alternative design, i.e., why they are less effective
  - Usage of advanced Tableau features, such as sorting, filtering, and highlighting.