# Tutorial 1

Research Methods for Political Science

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Trinity College Dublin,
https://andrsalvi.github.io/research-methods/

# Table of contents

# Administrative Stuff

## Focus of Tutorials

- Furthering what we did in class;
- Hands-on SPSS;
- Real-world applications of theories, concepts and quantitative methods;
- Revision of Homeworks;
- Q&A;
- **NB: tutorials do not replace the lectures!**;

# Assessment

1. 60% of mark based on end-of-term exam (covers methods and statistics).
2. 1 papers counting 16% (Deadline: 30/11 @ 11:59pm). Work will be done *in groups* submitting joint papers.
3. 4 homework exercises (4 per term), worth 20% of overall mark. Submit online via Turnitin *on the Monday evening (11:59pm) preceding the tutorial session*.
4. Tutorial participation is worth 4% of your overall mark. They should also attend the presentation sessions (weeks 9 and 10 in lecture).
   - Absence policy: Two unexcused absences in tutorials and 1 in the presentation will be tolerated. Beyond that, the student will receive a zero for participation.

- 5 points per day will be taken off your mark on assignments submitted late without a valid excuse (capped at 30 points).

# Practical Information

# Assignements and Turnitin

All the work should be submitted on Turnitin

- LaTeX, Word/Open Office and submitted as **PDFs** (Screenshots are not sufficients!)
- If you include tables, do not use a screenshot, but use the "export" function from SPSS. Please save figures appropriately in high resolution.
- Statistical Software: SPSS. You can use alternatives such as R or STATA if you want, but not Excel!
- Please do include the syntax from whichever software you are using!

## Turnitin Credentials

Class ID: 19060845
Password: po3110
*Please register ASAP!*

# Important Dates

Available on the Syllabus. Google Calendar on the tutorials' website.

- Week 4: HW 1 (next Monday!)
- Week 6: HW 2 (15 October)
- Week 9: HW 3 (5 November)
- Week 11: HW 4 (19 November)

## Paper:

- 30/11 @ 11:59pm

## Support

- I am happy to receive your feedback at any time! (content, teaching and tutorial style, too fast/slow?)
    - Short Surveys?
- Online Resources:
  `http://andrsalvi.github.io/research-methods`
- Questions:
    1. salvia@tcd.ie
    2. Slack Channel
    3. In class!
    4. Office Hours

# Brief Review of Research Design

## Central Terms and Definitions

- Population
- Sample
- Random sample
- Distribution of Sample Mean: `http://onlinestatbook.com/stat_sim/sampling_dist/`
- Probability

# Central Terms and Definitions

- Concept
- Theory
- Deduction
- Induction
- Levels of measurement: nominal, ordinal, interval-ratio

# Measures Central Tendency

- Convenient way to describe a variable through a single number
- Gives us a sense of the where to locate the *"centre"* of the distribution
- Measures:
  1. Mode
  2. Median
  3. Mean

## Mode

- In a nutshell: the most frequent value;
- In a more elegant way: "the value that is most likely to be sampled".
- Particularly intuitive and easy to spot in a frequency table
- We can have more than one mode (or none).
- Useful for nominal data! Why?

# A Fantasy Example



Absolute Frequency of Characters' Race in the Lord of the Rings
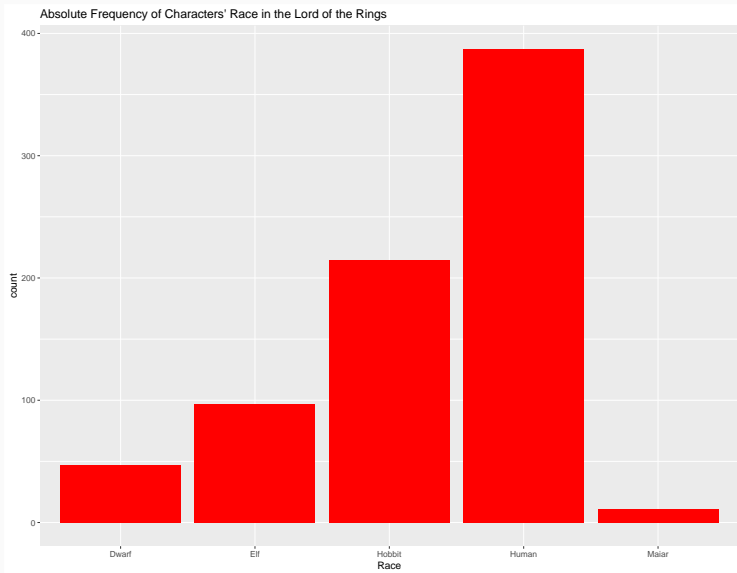
# A Fantasy Example

| Race | Frequencies | Relative Frequencies |
|------|-------------|----------------------|
| Dwarf | 47 | 0.062 |
| Elf | 97 | 0.128 |
| Hobbit | 215 | 0.284 |
| Human | 387 | 0.511 |
| Maiar | 11 | 0.015 |
| | 757 | 1 |

## Median

- The value at the midpoint of a distribution.
- It splits the distribution in half.
- How to find it?
    1. Data need to be ordered!
    2. If the number of observations is *odd*: value at position $\frac{n+1}{2}$
    3. If the number of observations is *even*: average between the value at position $\frac{n}{2}$ and the value at position $\frac{n+1}{2}$
- Several tricks to do it quickly in SPSS
- Can we find the median in the previous example?

# Mean

- Estimate mean: $\bar{x} = \frac{\sum x}{n}$
- We need an interval ratio!
- Influenced by outliers, while mode and median are not.
- Always "internal" with regards to the interval.

## Short Exercise: find the mean and the median

| Movie | Box Office Revenue (in Millions) |
|---|---|
| The Fellowship of the Ring | 871.5 |
| The Two Towers | 926.0 |
| The Battle of Five Armies | 956.4 |
| The Desolation of Smaug | 958.4 |
| The Unexpected Journey | 1021.0 |
| The Return of the King | 1120.0 |

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What if the "Return of the King" had a Revenue of 12000.0 ?

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What if the "Return of the King" had a Revenue of 12000.0 ?

Now some exercise on pen and paper

# SPSS 101

- Getting Started: How to open SPSS?
- Importing Data
- "The code"

## Getting the data

- LoTR Words by Characters Dataset:
  https://github.com/AndrSalvi/research-methods/
  raw/master/course/data/wordsbycharacters.sav
  - Original version from https://www.kaggle.com/mokosan/
    lord-of-the-rings-character-analysis/data
  - (Kaggle - Mokosan)
- UCDP Dataset:
  https://github.com/AndrSalvi/research-methods/
  raw/master/course/data/UCDP.sav
  - Original version from Pettersson, Therése and Kristine Eck (2018)
  - http://ucdp.uu.se/