

# Continuing Medical Education

## Research Methodology: Results

Date & Time: 21.08.2023, 8.00 am

Venue: Conference Room  
(Level - 08, Academic Building)

Presented by  
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Organized by  
Research Cell, GMC

- ▶ **The results (or findings) section is the part of a research paper in which an author reports the findings of their study in connection to their research question(s).**

# Qualitative Research

- ▶ Qualitative research uses non-numerical, descriptive data, such as language, theme, and ideas that reflect the human experience.
- ▶ Qualitative data must be interpreted before it can be measured, and it is often collected by using interviews, survey questionnaires, or archival research.
- ▶ Many disciplines that fall within the social sciences will use qualitative data.
- ▶ When presenting qualitative results, authors will use qualitative data.

# Quantitative Research

- ▶ Quantitative research uses measurable (or quantifiable) numerical data that can be used to observe trends, make predictions, run experiments, and test hypotheses.
- ▶ If data can be counted, it is quantitative.
- ▶ Most disciplines that fall under STEM (Science, Technology, Engineering, or medicine) will primarily use quantitative data.
- ▶ When presenting quantitative results, authors will typically focus on number-based approaches that involve statistics, calculations, and data measurements.

# Data processing

- ▶ Before making results data need to be processed such as
  - ✓ Edit and clean data by checking and rechecking for omissions, inconsistencies, improbabilities etc.
    - ❖ Omission: missed information
    - ❖ Inconsistencies: non conformity of same information obtained by different sources or in different ways (gravity)
    - ❖ Improbabilities: illogical data (3 cases of dental problems in age group under 6 months)

# Contents of Results Section

## ► In this section are described:

- ❖ Actual results (with data in tabular or graphical form as appropriate)
- ❖ Any unexpected findings
- ❖ Results of simple statistical analysis (as appropriate) for example
  - ✓ Find out percentages, mean, median, mode
  - ✓ See the range, standard deviation etc.
- ❖ Results of tests of significance where necessary
- ❖ Results of analysis for correlation and regression between variables
- ❖ Number of dropouts, if any from the study

# Sequence of Presentation of Results

- ▶ There are two different ways in which you can present your findings:
  1. An integrated presentation of all data by objective
  2. Presentation of data by research instrument

# Data Presentation in Result Section

▶ Data can be presented in following ways:

1. Tabulation
2. Drawing

**\* Raw data should not be included in the main text of your paper.**



# Data presentation ...

## Tabulation

1. Univariate table
2. Bivariate table
3. Multivariate table

# Data presentation

## Tabulation

### General rules for making a table:

1. Purpose of the table should be clear
2. Every table should be numbered
3. Every table must have a suitable title
4. The title should be self explanatory and clearly spell out the purpose and content of the table
5. There should not be excess or very less number of column and rows
6. The unit of the variable should be clearly present
7. Foot notes should be present when needed
8. If the data secondary source of the data should be mentioned
9. The totals, percentages, averages etc. should be given when needed

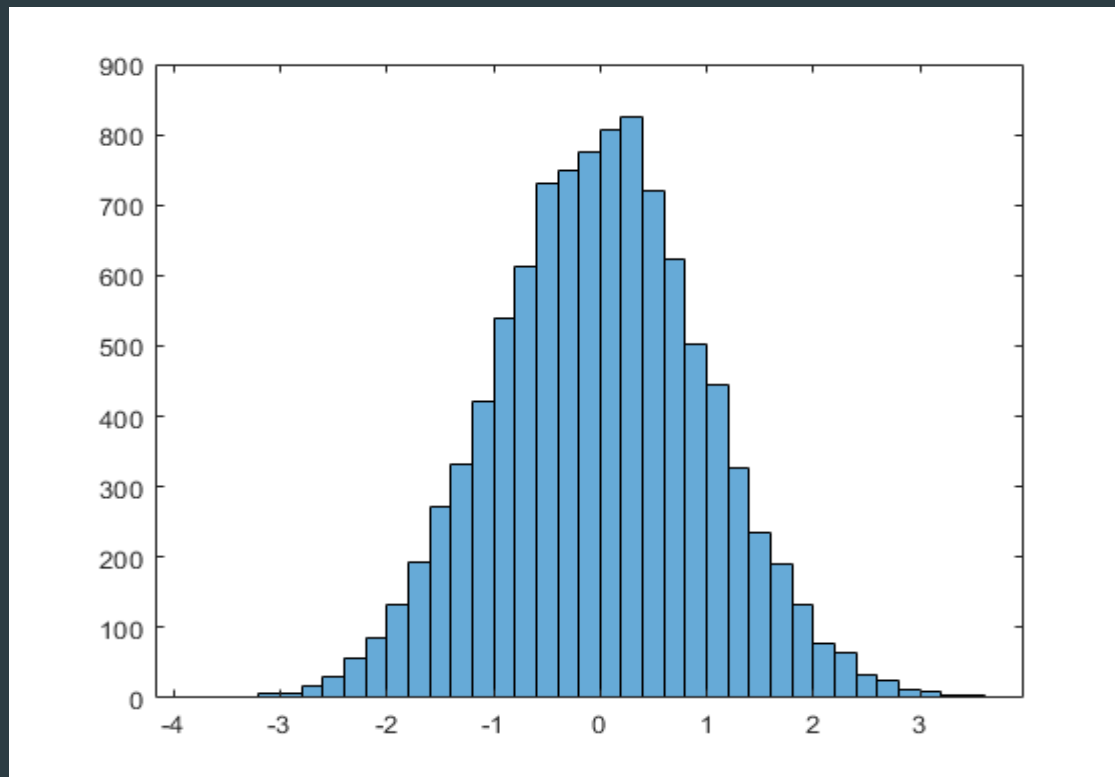
# Data presentation ...

## Drawing

For quantitative, continuous data	For qualitative data
<ul style="list-style-type: none"><li>• Histogram</li><li>• Frequency polygon</li><li>• Scattered diagram</li></ul>	<ul style="list-style-type: none"><li>• Bar diagram</li><li>• Pie diagram</li><li>• Line diagram</li><li>• Pictogram</li><li>• Map/spot diagram</li></ul>

# Data presentation ...

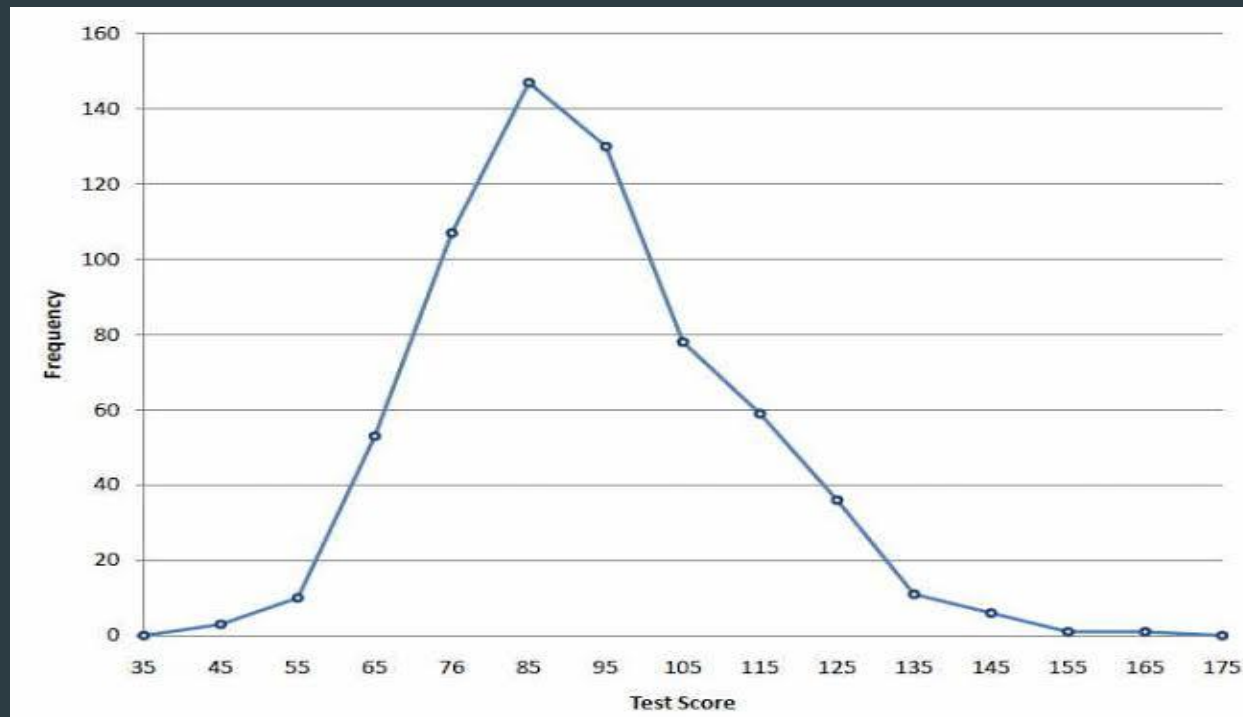
## Histogram



For showing single distribution  
such as age distribution of  
a population

# Data presentation ...

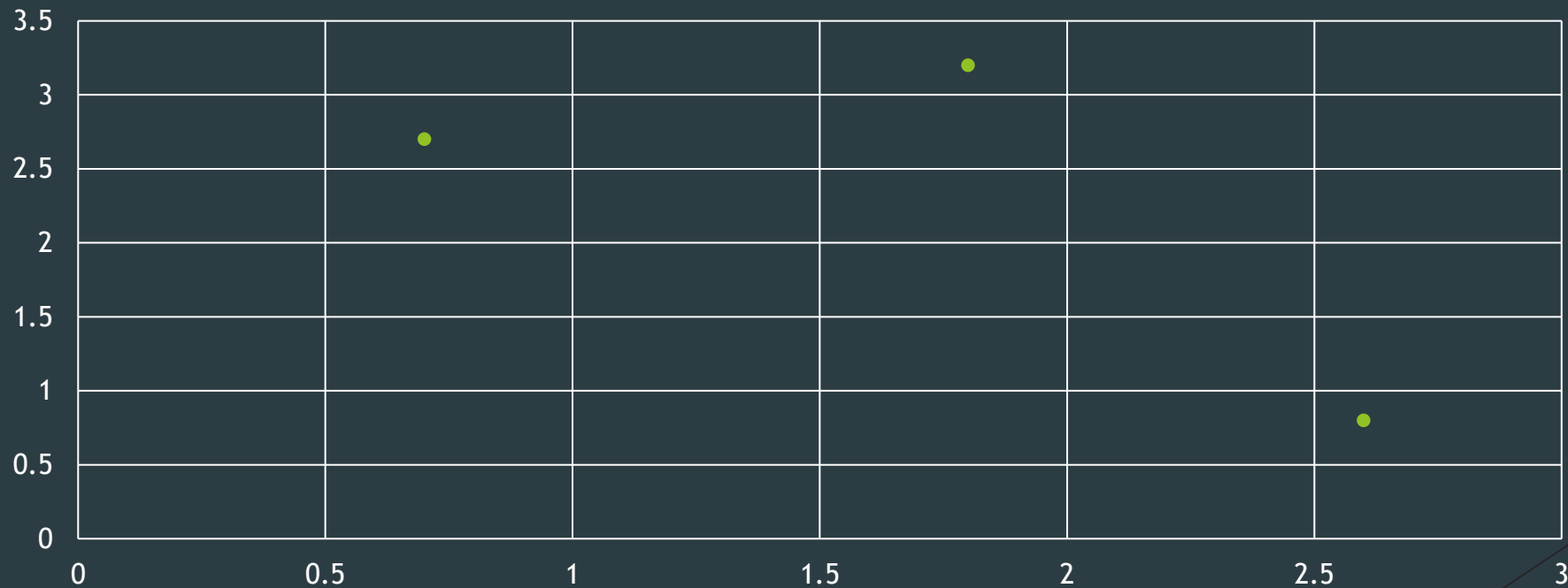
## Frequency polygon



Used for comparison of two or more distributions such as age distributions of two or more populations

# Data presentation ...

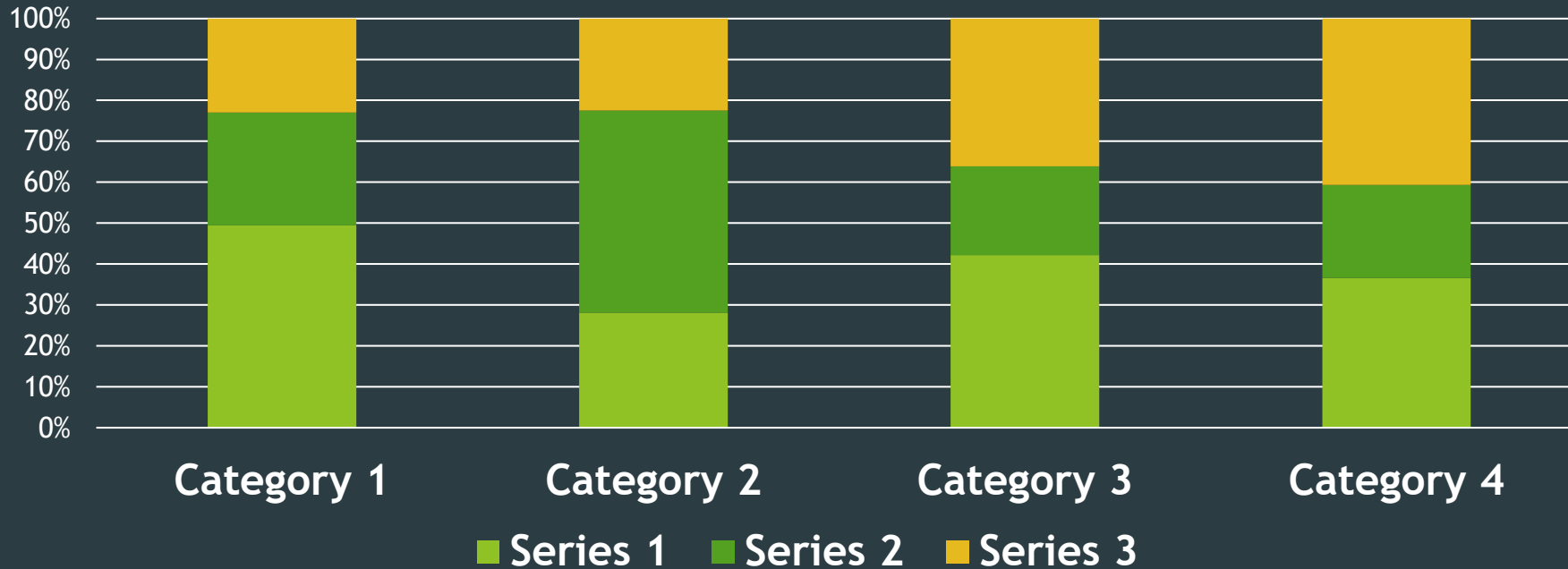
## Scattered diagram



Show the nature of correlation between two variables in the same Population such as height and weight of a population

# Data presentation ...

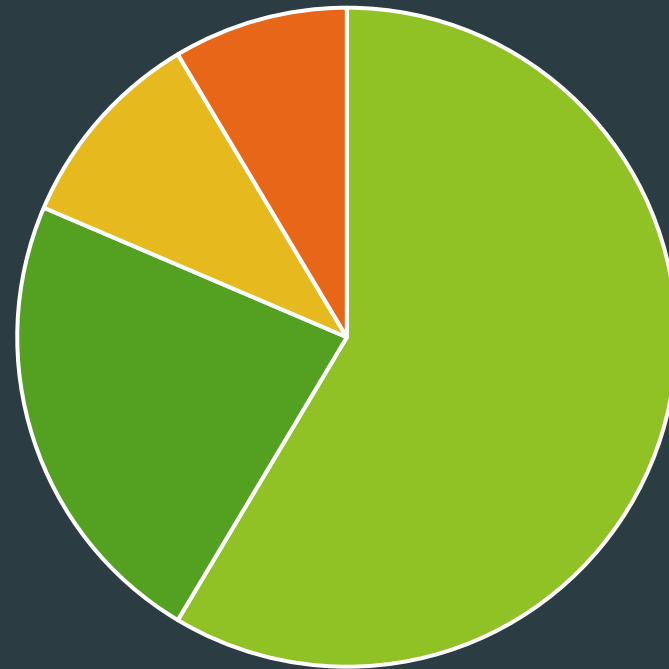
## Bar diagram



Used for visual comparison of magnitude of different frequencies in discrete data such as use of barrier, hormonal and IUCD by married woman

# Data presentation ...

## Pie diagram



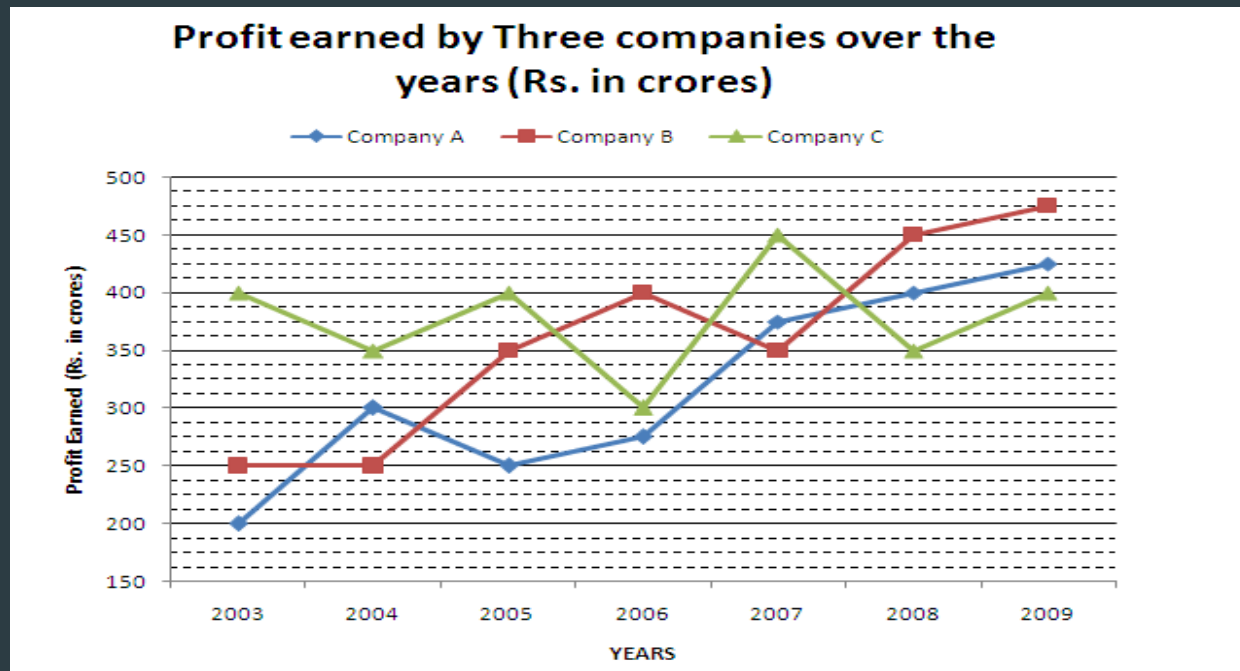
■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

Used to show percentage parts  
such as causes of maternal mortality  
in Bangladesh



# Data presentation ...

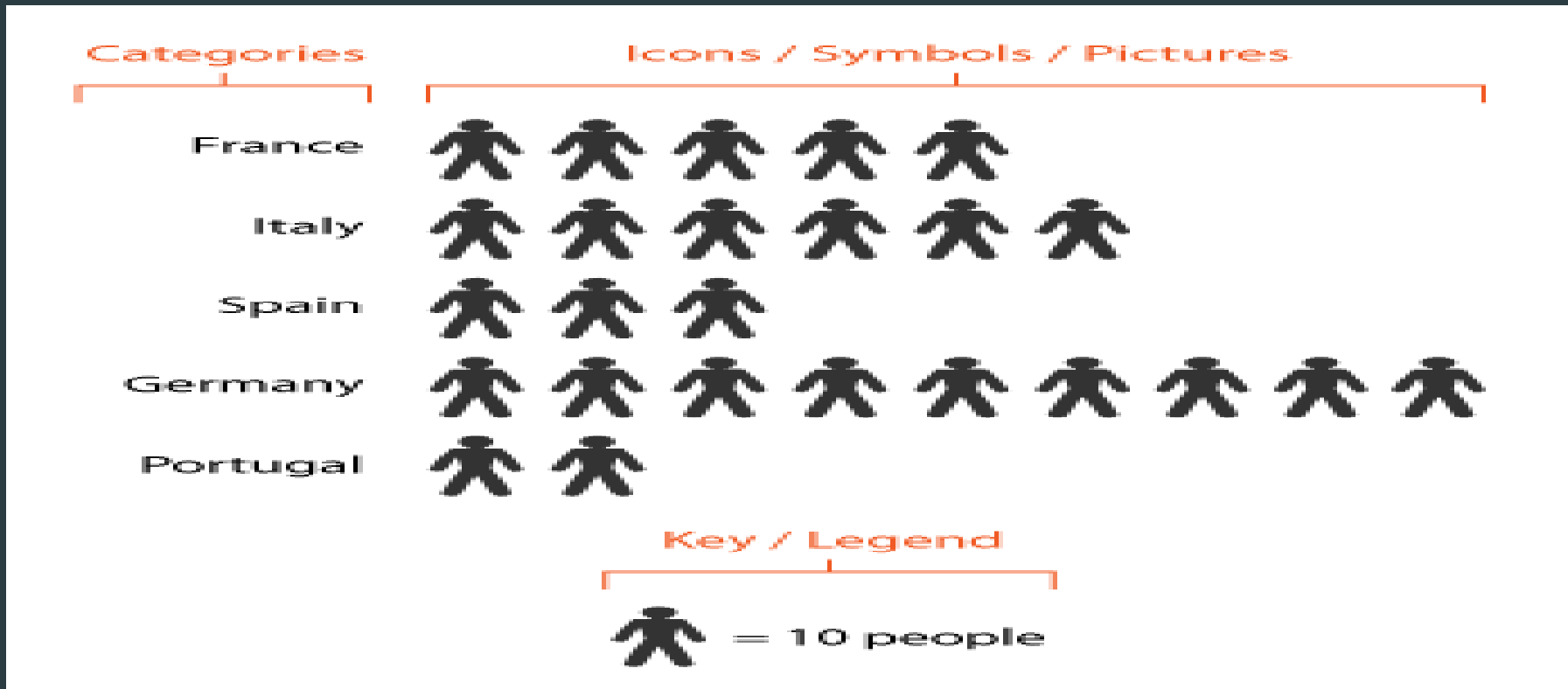
## Line diagram



It shows the trend of an event occurring over a period of time rising, falling and showing fluctuations such as malaria deaths, maternal mortality rate etc.

# Data presentation ...

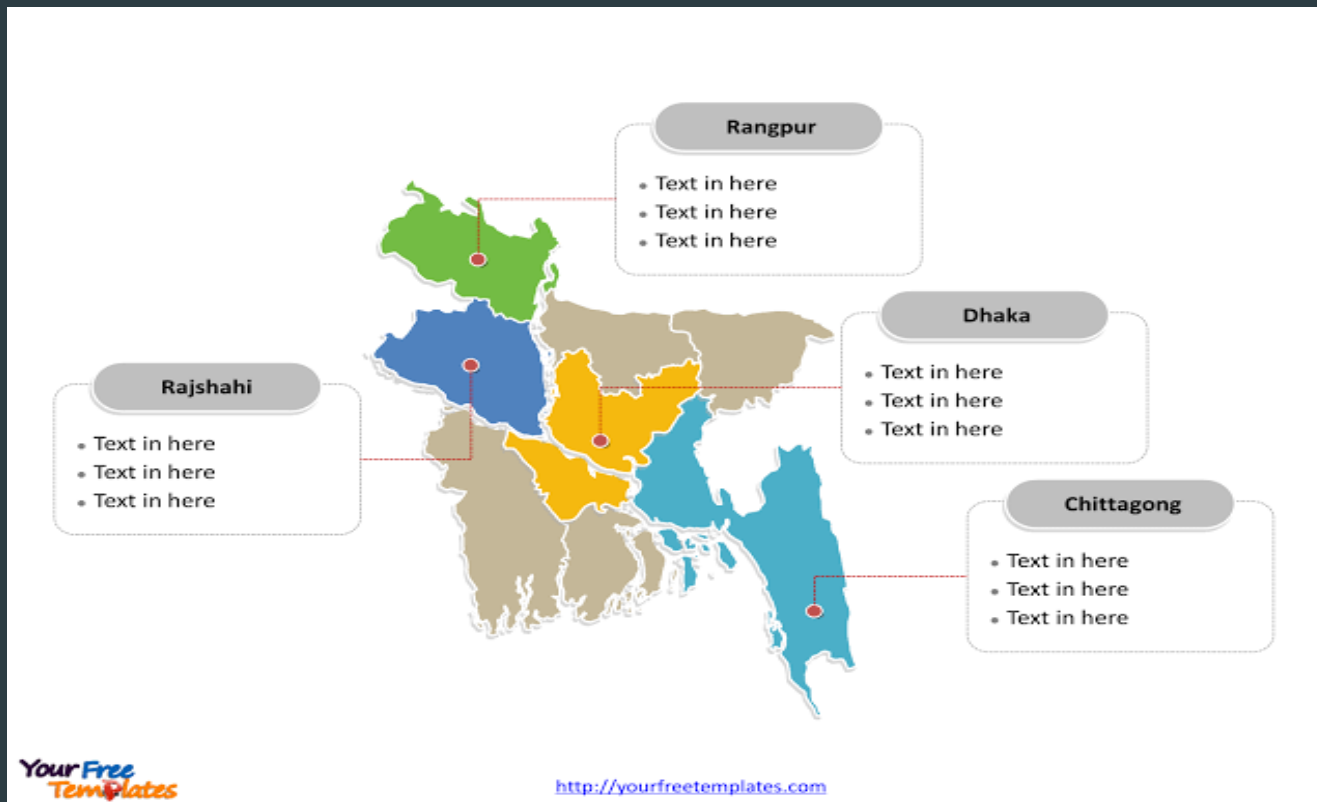
## Pictogram



Used to show the frequency of occurrence of events to common man by picture

# Data presentation ...

## Map or spot diagram



Used to show geographical distribution of frequencies of variable such as dengue cases of Bangladesh in the month of August 2023

# How is a results/findings section structured?

- ▶ When structuring the results section, it is important that your information is presented in a logical order. There are three basic parts to this section:
  1. First, begin with an introduction to connect the results with the research question(s). This brings the readers' focus back to the purpose of the study after reading the literature review and methods sections of your paper.

# How is a results/findings section structured? ...

2. Second, present your finding in a structured way ( such as thematically or chronologically), bringing the readers' attention to any important, interesting, or significant findings. Be sure it include a combination of text and visuals. Text should be written in past tense sentence.

# How is a results/findings section structured? ...

3. Third, the results section should include a closing paragraph that clearly summarizes the key findings of the study. This paves the way for the discussion section of the research paper, wherein the results are interpreted and put in conversation with existing literature.

# Things to be in mind making a result section

- ▶ Do write with an academic, impartial, objective tone to increase credibility as a scholar.
- ▶ Do provide clear topic sentences that connect your findings to your research question
- ▶ To take time to establish key findings in connection to your research question
- ▶ Do include any negative findings, as failing to do so would hurt your credibility as a scholar
- ▶ Do include statistical significance tests if applicable.

# Things to be in mind making a result section ...

- ▶ Don't attempt to discuss, interpret or analyze your findings within the results section.
- ▶ Don't use vague terms or generalizations when presenting your findings, always be specific
- ▶ Don't present raw data that can be summarized or presented visually.
- ▶ Don't present the same data multiple times, but decide on one format to best convey it.
- ▶ Don't present data that is not relevant to your research question(s).



# Take home message

- ▶ The results section of a research paper tells the reader what you found, while the discussion section tells the reader what your findings mean.
- ▶ The result section should always be written in the past tense.
- ▶ The result section should not attempt to interpret or analyze the findings, only state the facts with summarized tables, graphs and figures.
- ▶ Think of the results section as setting the stage for the discussion section by making all the necessary information known to the reader.
- ▶ It is not uncommon for these sections to be combined.

**Thanks.**

A white question mark is centered on a dark blue background. To the right, there are several overlapping, semi-transparent green geometric shapes, including triangles and polygons, creating a layered effect. The overall composition is abstract and modern.

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