Collection and Presentation of Data

An Overview

JUSTINE JOY N. SABANAL

What We'll Discuss

TOPIC OUTLINE

Method of Data Collection
Method of Data Presentation
Frequency Distribution Table
Sampling Techniques

General Classification of Collecting Data

Census (Complete Enumeration)

the process of gathering information from **EVERY UNIT** in the **POPULATION.**

Survey Sampling

the process of obtaining information from the **UNITS** in the selected **SAMPLE.**

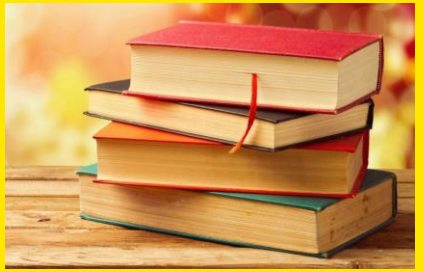
Methods of Collecting Data

Survey

Observation

Experimentation

Use of Existing Documents



Registration

Methods of Presenting Data

Textual Presentation

Presenting data in words, sentences and paragraphs.

Example: At last count, 38 airlines were operating 707's. 720's and 727's over the world's airlines. The far-flung Boeing fleet has now logged an estimated 1,803,704,000 miles (22,855,948,000 km) and has massed approximately 4,096,000 revenue flight hours. Passenger totals stand at upwards of 71.6 million.

Methods of Presenting Data

Textual Presentation

Presenting data in words, sentences and paragraphs.

Tabular Presentation

It serves a variety of purposes, making presentations powerful tools for convincing and teaching.

Methods of Presenting Data

Textual Presentation

Presenting data in words, sentences and paragraphs.

Tabular Presentation

The systematic organization of data in rows and columns.

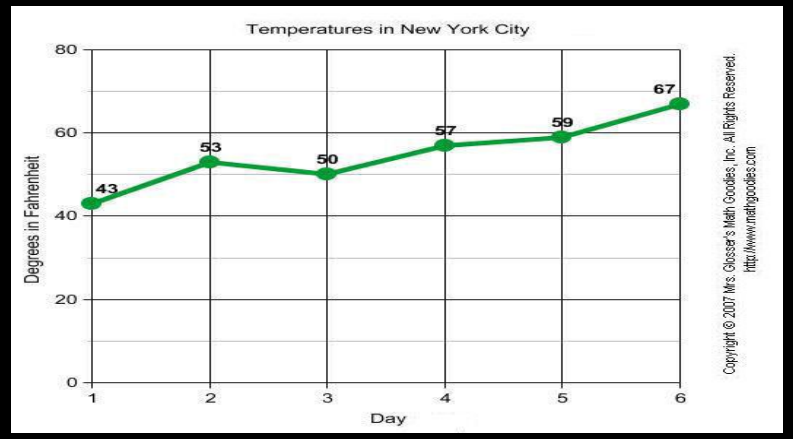
Graphical Presentation

It refers to the use of intuitive charts to clearly visualize and simplify the data sets.

Types of Graphical Presentation

Line Graph

A graphical presentation of data especially useful for showing trends.



When to use?

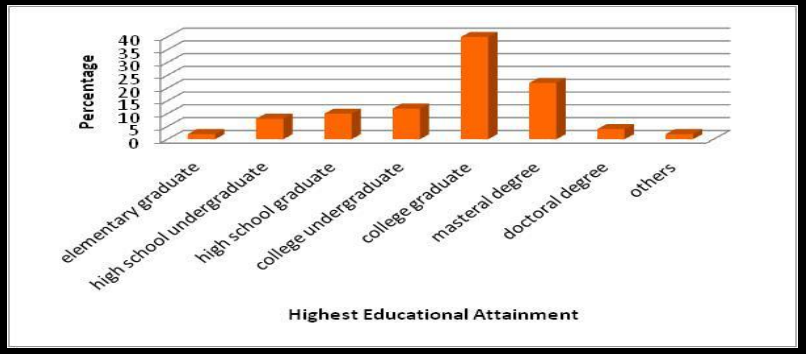
It is used to **track** changes short or long periods of time.

It is best when **smaller changes exist.**

Types of Graphical Presentation

Bar Graph

A chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent.

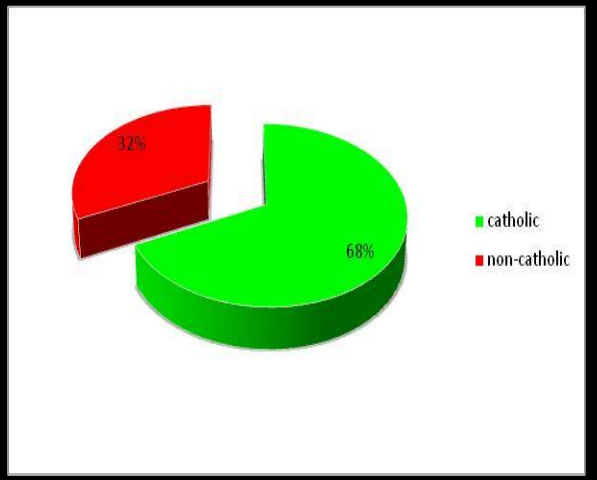


When to use?

It is used to **compare** things between different groups or to track changes overtime.

It is best when the **changes are larger.**

Types of Graphical Presentation



Pie Graph

a circular graph that is useful in showing how a total quantity is distributed among a group of categories. .

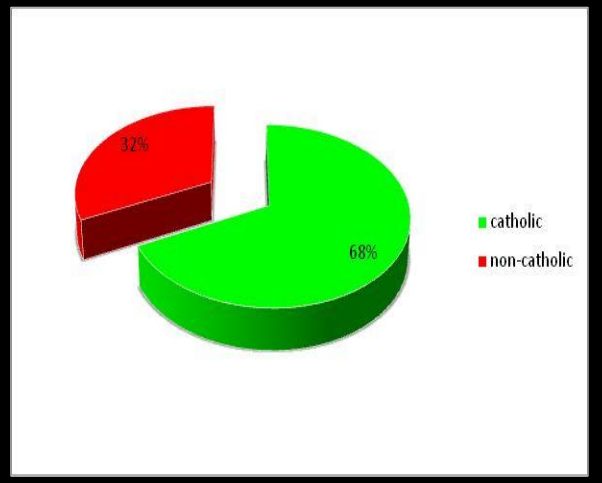
When to use?

It is used when you are trying to **compare parts of a whole.**

Types of Graphical Presentation

Pictograph

a pictorial chart in which each symbol represents a definite and uniform value.



When to use?

It is used to **represents ideas, concepts or stands in for a larger quantity of something.**

Ways on How to Present Grouped Data

Introduction

Describing a bulk of data is sometimes difficult to achieve by depending solely to textual method of presenting data. To remove this hindrance, it is necessary to group large mass of data into different categories/classes and determine the number of observations falling in each class. Such method of summarizing/arranging data in tabular form is called a *frequency distribution.*

TYPES OF FREQUENCY DISTRIBUTION TABLE

QUALITATIVE FDT

a frequency distribution table where data are grouped according to some qualitative characteristics, data are grouped into non numerical characteristics.

UNGROUPED QUANTITATIVE FDT

a frequency distribution table where data are grouped according to some qualitative characteristics, data are grouped into non numerical characteristics.

GROUPED QUANTITATIVE FDT

a FDT used when grouping a large set of numerical data.

Qualitative FDT

Table 1. Frequency Distribution of the Gender of Respondents of a Survey

Gender of Respondents	Number of Respondents	Percentage
Male	25	25%
Female	75	75%
TOTAL	100	100%

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Ungrouped Quantitative FDT

Table 2. Frequency Distribution of the Number of Siblings of the Respondents of a Survey

Number of Siblings	Number of Respondents	Percentage
0	10	10%
1	24	24%
2	30	30%
3	26	26%
4	10	10%
TOTAL	100	100%

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Grouped Quantitative FDT

Table3. Frequency Distribution on the number of people aged 25-64 covered by health insurance in 2010.

Age in years	Number of Respondents	Percentage
25-34	5	10%
35-44	15	30%
45-54	20	40%
55-64	10	20%
TOTAL	50	100%

Definition of Terms

Array
The data arranged according to magnitude.

Class Interval
defined by a lower limit (LL) and an upper limit (UL).

Class Boundaries
the true class limits, consisting of the lower class boundaries and upper class boundaries

Range
numerical difference between the largest and the smallest observation

Frequency
the number of observations falling in each class interval.

Relative Frequency
obtained by dividing the class frequency by the total frequency.

Class Size
the numerical difference between two successive lower limits or two successive upper limits.

Class Mark
the class midpoint between the UCL and LCL (UCB and LCB) of a class interval.

Cumulative Frequency
- *Less than cumulative frequency (<CF)*
- *Greater than cumulative frequency (<CF)*

STEPS in constructing the FDT

1

MAKE AN ARRAY

Arrange the data from lowest to highest value. But, it is optional.

2

COMPUTE THE RANGE

$R = HV - LV$

3

ESTIMATE THE NO. OF CLASSES

$k = \sqrt{n}$ **where n is the total number of observations**

4

DETERMINE THE CLASS SIZE

$c = \frac{R}{k}$

STEPS in constructing the FDT

5

DETERMINE THE 1ST LOWER LIMIT

The 1st lower limit is the smallest value in the data set.

6

DETERMINE THE NEXT LOWER LIMIT

Add the class size to the previous lower limit.

7

DETERMINE ALL UPPER LIMIT

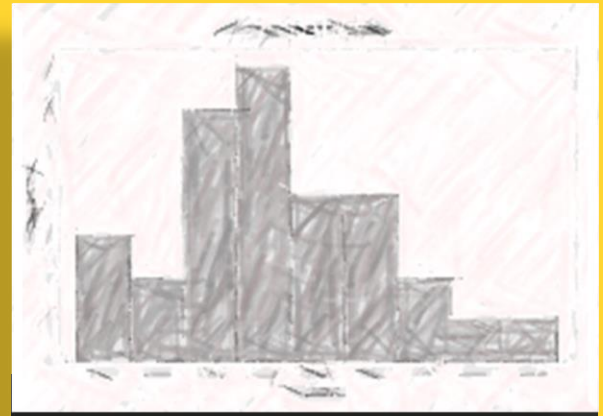
Refer to the values of the lower limit.

8

COUNT THE FREQUENCY

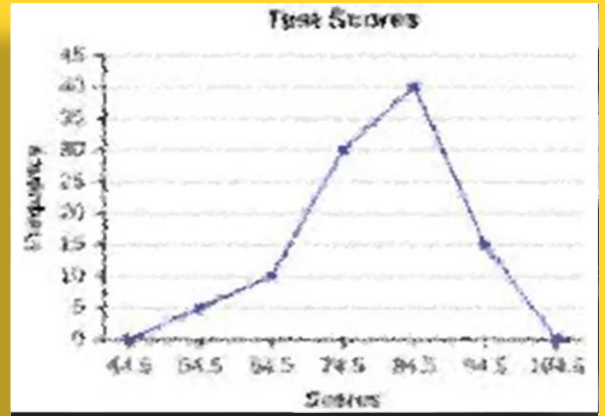
Determine the no. of observation in each classes; then complete the table

VISUAL PRESENTATION OF THE FDT



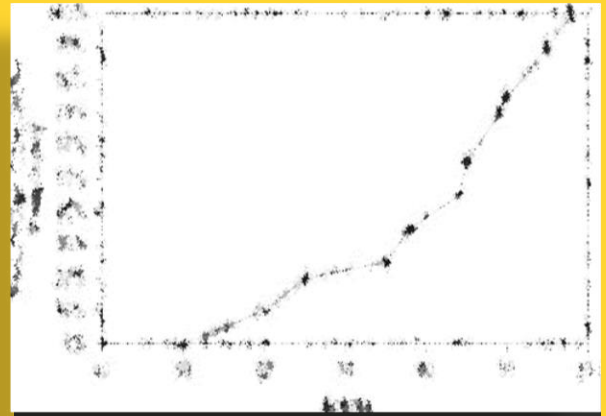
HISTOGRAM

A graphical device for understanding the shapes of the distribution.



FREQUENCY POLYGON

They serve the same purpose as histograms, but are especially helpful in comparing multiple sets of data



OGIVES

graphs that are used to estimate how many numbers lie below or above a particular variable or value in data.

TRY THIS

CONSTRUCTING GROUPED FREQUENCY DISTRIBUTION

84	80	68	87	86	70	79	90	67	80
82	62	85	86	61	86	87	91	78	86
72	96	89	84	78	88	78	78	82	76
70	86	85	88	70	79	75	89	73	86
72	68	82	89	81	69	77	81	77	83

END OF DISCUSION