WALTER TUTORIAL SERVICE

BASIC STATISTICS (STA1510) NOTES

STUDY UNIT 1 SUMMARY

Introduction

The objective of basic statistics is to collect, analyse and to draw conclusions about a population which is based on information that is contained in a sample.

Statistics- is the branch of mathematics that deals with the collection, analysis and presentation of numerical data.

Two types of statistics

- **(i) Descriptive statistics- a branch of statistics that deals with the presentation, collection characterised by different features of the data.**
- **(ii) Inferential statistics- a branch of statistics where we estimate the sample statistics or draw conclusions about a population parameter.**

Sample versus population

Sample- is a subset of population or a fraction.

Population- is the collection of all items or objects that we wish to study.

Parameter versus statistic

Parameter- is a numerical value that summarises a population.

Statistics- is a numerical value that describes the characteristics of a sample and it can summarise the sample.

Variables

We have two types of variables namely:

- **(i) Quantitative variables**
- **(ii) Qualitative variables**

Quantitative variables- are variables that are measured on a numerical scale.

NB: quantitative variables are also known as numerical variables.

Two types of quantitative/numerical variables

(i) Discrete variables

(ii) Continuous variables

Discrete variables- are variables that takes values from a countable set

Examples of discrete variables

(i) Number of legs of an animal

(ii) Number of students

(iii) Number of cars

(iv) Number of chairs

Continuous variables- are variables that are within the limit where any value is possible.

Examples of continuous variables

(i) Height

(ii) Weight

(iii) Time

Qualitative variables- are variables that are not measured on numerical scale or with no natural sense of ordering.

NB: qualitative variables are also known as categorical variables

Two types of qualitative/categorical variables

(i) Nominal variables

(ii) Ordinal variables

Nominal variables- are variables which have no numerical value, where we are talking about the order or the sequence.

Examples of nominal variables

(i) Gender

(ii) Colour

(iii) Listing occupation

Ordinal variables- are variables where there is a clear ordering of the variables

it is similar to categorical variables

Examples of ordinal variables

(i) Size (small, medium and large)

(ii) Rating (poor, good, very good)

Interval variables- variables where the intervals between them are equally spaced.

It is similar to ordinal variable.

Ratio variables- variables with the feature of interval variable and they have a meaningful ratio.

Levels of measurement scale

Measurement scale- is the process where we assign to events that are according to the rules.

Three types of level of measurement scale

(i) Nominal level of measurement scale

(ii) Ordinal level of measurement scale

(iii) Interval level of measurement scale

Nominal level of measurement scale- measurement scale that applies to names or it is used for objects or elements that consists of names.

Examples of nominal level of measurement scale

(i) Name of students

(ii) Types of vegetables

(iii) Type of a car

(iv) Number on rugby jersey

Ordinal level of measurement scale- measurement scale where one classification is ranked higher than another.

Examples of ordinal level of measurement scale

(i) Rate of the nurse at the clinic

(ii) Ranking of academic staff at university of Pretoria

(iii) The size of a T-shirt

Interval level of measurement scale- measurement scale where all calculations are permitted in the data and it is used for real numbers.

Examples of interval level of measurement scale

(i) Number of people in a room

(ii) Income of a person

(iii) Temperature of water

(iv) Time taken to write an exam

END OF STUDY UNIT 1

COMPILED BY WALTER

#STATS IS FUN!!!!!