



Statistics And Forensic Applications

علم الإحصاء و التطبيقات الجنائية

W1. An introduction to statistics

كلية التقنية الطبية / قسم علوم الأدلة الجنائية

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COURSE OUTLINE

- 1. Introduction to statistics.**
- 2. The importance of statistics, its relationship with other fields, and its applications.**
- 3. The major processes for statistics methods.**
- 4. The meaning of forensic statistics.**
- 5. Introduction to information technology.**
- 6. Exam I**
- 7. The internet & the world wide web: exploring cyberspace.**

COURSE OUTLINE

- 8. SOFTWARE: Tools for Productivity & Creativity.**
- 9. HARDWARE: THE CPU & STORAGE—The Source of Computing Power.**
- 10. Hardware: input & output—taking charge of computing & communications.**
- 11. Communications, networks, & cyberthreats: the wired&wireless world.**

COURSE OUTLINE

- 12. The era of big data: databases, information systems, & artificial intelligence.**
- 13. Building systems & applications: software development, programming, & languages.**
- 14. Internet of Things**
- 15. Artificial Intelligence**
- 16. Exam II**

INTRODUCTION

- The word statistics conveys a variety of meaning to people in different walks of life.
- The word statistics comes from the *Italian* words *Statista*



(Statement).

- The *German* word ***Statistik***



Political state

- The word **Statistics** today refers to either quantitative information or a method of dealing with quantitative or qualitative information.

DEFINITION

- “Statistics is defined as collection, Presentation, analysis and interpretation of numerical data”.
Acc. Croxton & cowden
- statistics is the sciences and art of dealing with figure and facts.

Biostatistics

- Biostatistics is the branch of statistics applied to biological or medical sciences.
- Biostatistics is the methods used in dealing with statistics in the field of health sciences such as biology, medicine, nursing, public health etc.

○ **Biostatistics** is the branch of statistics applied to **biology** or **medical sciences**.

Biostatistics is also called “***Biometry***”

○ In Greek, **Bios**  **Life**

○ **Metron**  **Measured**

○ **So, it is measurement of life**

USE & APPLICATION OF STATISTICS

- It facilitates comparisons
- It simplifies the message of figure
- It helps in formulating and testing hypothesis
- It help in prediction

SCALE OF MEASUREMENT

- ▶ Measurement is the process of assigning numbers or labels to objects, persons, states, or events in accordance with specific rules to represent quantities or qualities of attributes.
- ▶ We do not measure specific objects, persons, etc., we measure attributes or features that define them.

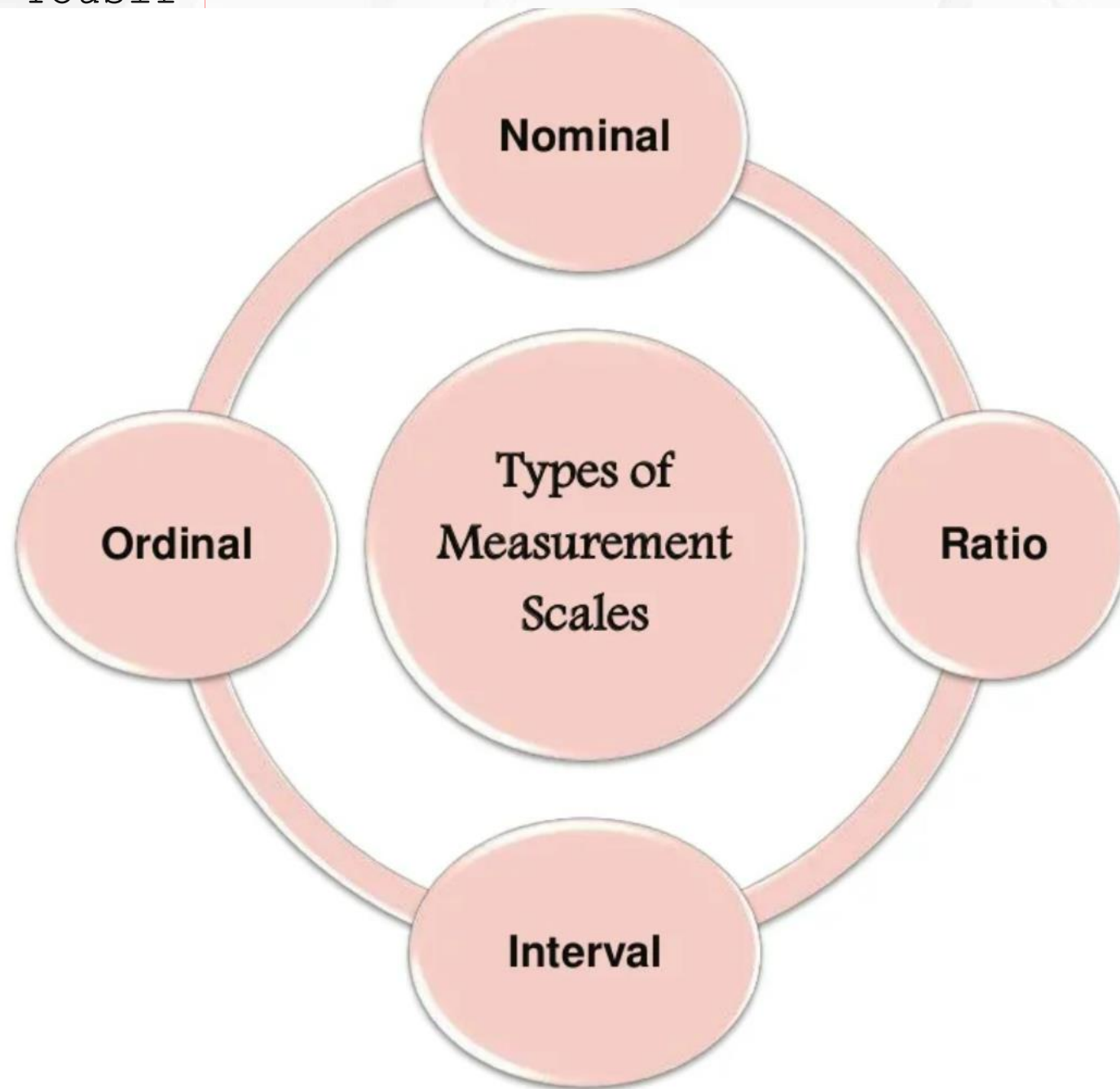
FOUR BASIC SCALES OF MEASUREMENT

Nominal Scales

Ordinal Scales

Interval Scales

Ratio Scales



Nominal measurement

- There must be distinct classes but these classes have no quantitative properties. Therefore, no comparison can be made in terms of one category being higher than the other.
- **For example** - there are two classes for the variable gender - **males** and **females**. There are no quantitative properties for this variable or these classes and, therefore, gender is a nominal variable.

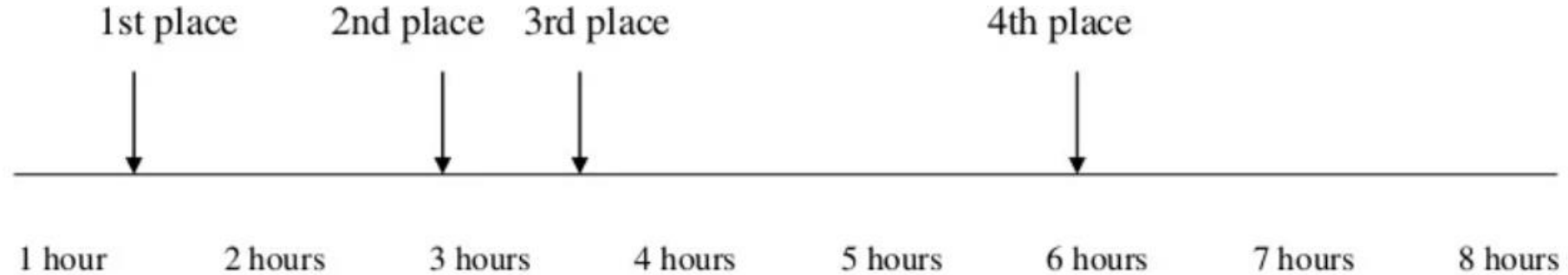
Ordinal Scales

There are distinct classes but these classes have a natural ordering or ranking. The differences can be ordered on the basis of magnitude.

For example - final position of horses in a thoroughbred race is an ordinal variable. The horses finish first, second, third, fourth, and so on. The difference between first and second is not necessarily equivalent to the difference between second and third, or between third and fourth.

Example:

finishing place in a race
(first place, second place)



Thank
you!

