الموضوع :

Types of data :

1. Quantitative كمي
   - Numirical data
   * Discrete (counting)
     8 cats
     8.5 cats ✗
     2.37 cats ✗
   * Continuous (Measurement)
     - distance - speed ....

2. Qualitative نوعي
   - uses words
   - Descriptive data based on observation
   - Involves 5 senses :
     smell, see, feel, taste, hear

/ / التاريخ : الموضوع :

Scales of Measurement

[1] Nominal scale data
- Less attached to numbers
- Qualitative / categorial
- order doesn't matter
- Like : Names - Colors, Gender
- Can't be used in calculations

[2] Ordinal scale data
- Ranking / placement
- Difference can't be measureed
- order matters
- Like : experiences

[3] Interval Scale data
- order matters
- Differences can be measured (except ratios)
- No true (0) starting point
- Like : Temperatures

[4] Ratio scale data
- order matters
- Differences are measurable (including ratios)
- Contains a (0) starting point
- Like : Grades

* Statistical test :
1- it needs data
2- it needs null or primary hypothesis H_0
3- it needs an Alternative hypothesis, H_1

* P-values
- P-value < 0.05
$H_0 \rightarrow X$
- P-value > 0.05
معنى دليل كافي ذلنا نرفض H_0

P-values → one-sided
→ Two-sided

/ / التاريخ: الموضوع:

* Calculating p-values
  - P-values are determined by adding up probabilities
  - p-value is the sum of three parts:
    1) The probability random chance would result in the observation.
    2) The probability of observing something else that is equally rare.
    3) The probability of observing something rarer or more extreme.

* Confidence interval (CI)
  is a range of values used to estimate the true population parameter based on a sample of data. it is expressed as a percentage (95% or 99%) indicating how confident we are that the true value lies within this range

* Regression analysis
  it is a statistical method used to study the relationship between a dependant variable and one or more independant variables.