A/ ASSIGNMENT RECAP

- Write **a 1200-word report** analysis on macroeconomic indicators for a sample of countries to evaluate **economic conditions**, including calculating **summary statistic**s, **confidence intervals**, and **hypothesis tests.**

Suggested Structure:

I.Question 1
- A.   **Country group introduction (Suggested 100 words)**
- B.   **Data source Overview (Suggested 100 words)**
- C.   **Histograms Analysis (Suggested 150 words)**
  - II.   **Question 2**
- A.   **95% CI for HDI and Gini (Suggested 150 words)**
- B.   **Normality Assessment (Suggested 150 words)**
- C.   **Compare 95% vs 99% CIs (Suggested 150 words)**
  - III. **Question 3:**
- A.   **Describe HDI calculation (Suggested 100 words)**
- B.   **Hypothesis testing for HDI (Suggested 100 words)**
- C.   **Compare significance levels (Suggested 200 words)**

B/ KEYWORD EXPLANATIONS

   1. **Confidence interval**

An estimated range of values that is likely to contain the true population parameter, calculated from sample data at a specified confidence level.

2.   **Indifferent consumer**

In the Hotelling model, the consumer who is indifferent between purchasing from the two firms, is located at the point where they are equidistant.

3.   **Hypothesis testing**

The use of statistical analysis to determine whether a hypothesis about a population parameter can be rejected based on evidence from a sample, at a given significance level.

4.   **Normal distribution**

A symmetrical bell-shaped probability distribution is described by its mean and standard deviation, which many natural phenomena and sample means approximate.

5.   Significance level
The probability of rejecting the null hypothesis when it is true, reflects the maximum risk of making a Type I error the researcher is willing to accept.

6.   Summary statistics
 Measures used to describe and summarize the essential information about key characteristics of a sample data set, such as the mean, median, and standard deviation.

7.   Coefficient
A numerical parameter estimate calculated from a sample that quantifies the relationship between variables in a statistical model.

8.   Mean
A measure of central tendency calculated as the sum of all values divided by the number of values in a sample or population distribution.

9.   Standard Deviation
A measure of dispersion calculated as the square root of the variance, showing how spread out a distribution is from its mean.

10.   Null Hypothesis
A statement of no statistical significance or effect that is tested and either supported or rejected based on evidence from a sample.

11.   Alternative hypothesis
A statement of statistical significance or effect that is positioned as the alternative to the null hypothesis and adopted if the null is rejected.

C/ REFERENCES

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- Inequality trends in developing countries (Journal of Globalization and Development): https://www.degruyter.com/document/doi/10.1515/jgd-2020-0023/html
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