MICROSOFT EXCEL: DESCRIPTIVE STATISTICS

Learning Objectives:

- Summarizing quantitative variables.
    - Graphical representation of quantitative continuous variables (histogram)
    - Descriptive statistics for (1) one variable and (2) two variables.
    - Interpret descriptive statistics results.
- Presenting results by using Microsoft Power Point:
    - Creating a PowerPoint file to present the results
    - Saving presentation as Power Point Show

Problem

A study was carried out in order to assess two different therapeutic schemas for treatment of ferriprive anemia (iron deficiency) in newborn child. There were included into the study newborn from rural and urban environments. Two different schema were applied: a daily schema (once a day the mothers administrated the treatment to their child, every day of the week), and a bi-weekly schema (in Monday and Thursday mothers administrated to the child the treatment). The data were collected and stored in **PA3-1.xls** file.

Requests

1. Save the **PA3-1.xls** file in your folder.
2. Insert a new sheet and name it <u>Histograms</u>. Copy in this sheet the quantitative continuous variables.
3. Create in the <u>Histogram</u> sheet the following table:

	A	B	C	D	E	F	G	H
1	Birth weight (g)	Haemoglobin (mg/dl) 6 months	Haemoglobin (mg/dl) 12 months			BIN Birth weight (g)	BIN Haemoglobin (mg/dl) 6 months	BIN Haemoglobin (mg/dl) 12 months
2	3650	12.10	13.20			1380	8.8	8.9
3	2600	13.20	13.20			1830	9.6	9.8
4	3000	10.10	13.30			2280	10.4	10.7
5	3150	9.20	12.10			2730	11.2	11.6
6	3700	10.60	12.20			3180	12.0	12.5
7	3800	12.30	13.00			3630	12.8	13.4
8	3000	12.30	12.90			4080	13.6	14.3
9	3000	11.40	12.90			4530		
10	2600	10.50	11.20					

4. Use *Histogram* function from **Data Analysis** to create the histograms for birth weight, haemoglobin 6 months and Haemoglobine 12 months.
5. Insert a new sheet named <u>Descriptive statistics</u>. Copy in this sheet the following variable: "Birth weight (g)"; "Hemoglobin (mg/dl) 6 months"; "Hemoglobin (mg/dl) 12 months", and "Treatment schema".
6. Compute descriptive statistics parameters for quantitative variables using *Descriptive Statistics* function from **Data Analysis**.
7. Calculate the 95% confidence intervals for means using the results previously obtained.
8. Compute descriptive statistics parameters for <u>Hemoglobin at 6 and 12 months</u> for patients with *Daily treatment schema* and for patients with *Bi-weekly treatment schema*. Calculate the 95% confidence intervals for means using the results previously obtained.
9. Create a PowerPoint representation with the following structure:

- 1st slide: title ("Summaries of Quantitative Variables"), author (your name) and authors' affiliation (as the name of University and the Faculty).
- 2nd slide: Type of variables (title). Create and fill with the proper information the following table:

Variable name	Units of measurement (if applied)	Type of variable	Scale of measurement
Rural vs Urban			
Birth weight			
Type of milk			
Haemoglobin 6 month			
Haemoglobin 12 month			
Treatment schema			

  - o Type of variable: qualitative vs quantitative (discrete / continuous)
  - o Scale of measurement:
    - Nominal or Ordinal for Quanlitative variables
    - Interval or Ratio for Quantitative variable

- 3rd slide: *Histogram of "Birth weight"* as title. Copy the Histogram from Excel.
- 4th slide: *Histogram of "Hemoglobin (mg/dl) 6 months"* as title. Copy the Histogram from Excel.
- 5th slide: *Histogram of "Hemoglobin (mg/dl) 12 months"* as title. Copy the Histogram from Excel.
- 6th slide: *Descriptive statistics* as title. Create a table in this slide to include the following parameters for investigated variables: mean and 95% confidence interval; Standard error; Kurtosis; Skewness; and Count.
- 7th slide: *Descriptive statistics: Treatment type* as title. Include the same information as on previous slide separately for patients with Daily treatment and for patients with Bi-weekly treatment.
- 8th - xth slide: *Results Interpretation* as title. Interpret the results obtained to the 7th request (just for parameters included in 6th slide).
- (x+1)th slide: Compare the mean of haemoglobin at 6 month with haemoglobin at 12 month based on 95% confidence interval. Is the mean of haemoglobin at 6 month significantly different by the mean of haemoglobin at 12 month?
- Final slide: The end slide.
- Save the presentation with the title of DescriptiveStatistics. The type of file must be **PowerPoint Show**.