Homework I
Spss Analysis of Frequency Tables, Related Graphs and Descriptive Statistics with Comments

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The data is about weekly studying hours of randomly selected 50 students from Faculty of Engineering.

10,10	14,40	19,10	23,90	12,70
16,20	8,70	15,20	10,30	16,20
10,10	8,30	16,20	11,50	7,60
10,40	13,80	8,20	6,50	8,90
13,80	17,90	12,60	15,20	7,50
9,70	9,50	12,60	15,60	15,30
12,10	11,30	14,50	10,20	6,30
17,60	8,30	15,20	14,20	12,40
13,80	10,30	8,40	20,60	8,30
7,20	10,50	11,00	17,80	11,20

6,30	8,70	10,50	13,80	15,60
6,50	8,90	11,00	13,80	16,20
7,20	9,50	11,20	13,80	16,20
7,50	9,70	11,30	14,20	16,20
7,60	10,10	11,50	14,40	17,60
8,20	10,10	12,10	14,50	17,80
8,30	10,20	12,40	15,20	17,90
8,30	10,30	12,60	15,20	19,10
8,30	10,30	12,60	15,20	20,60
8,40	10,40	12,70	15,30	23,90

Given data   Sorted given data

Data type of this data is Quantitative (Continuous) data and scale of it is "interval".
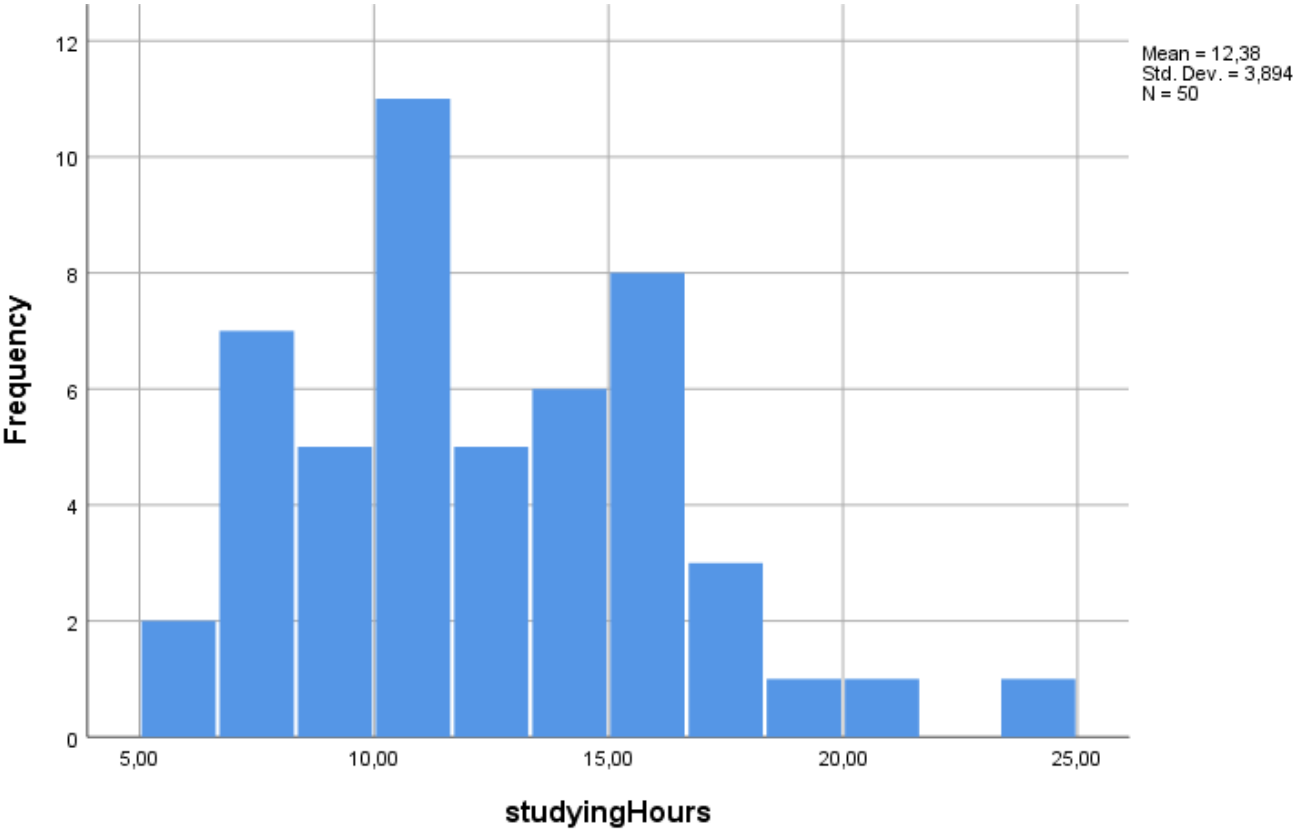Minimum value of this data is "6,30" and maximum value of this data is "23,90".

Frequency Table

group

		Frequency	Percent	Valid Percent	Cumulative Percent
6.30 - 9.24	1,00	12	24,0	24,0	24,0
9.25 - 12.19	2,00	14	28,0	28,0	52,0
12.20 - 15.14	3,00	10	20,0	20,0	72,0
15.15 - 18.09	4,00	11	22,0	22,0	94,0
18.10 - 21.04	5,00	2	4,0	4,0	98,0
21.05 - 23.99	6,00	1	2,0	2,0	100,0
	Total	50	100,0	100,0	

Highest frequency is 14 with %28 percentage that means most of the students study 9,25 – 12,19 hours.
Lowest frequency is 1 with %2 percentage that means just one student studies more than 21 hours.
Students rarely (%6) study more than 18 hours.

Graphs

Histogram

Mean = 12,38
Std. Dev. = 3,894
N = 50

Boxplot
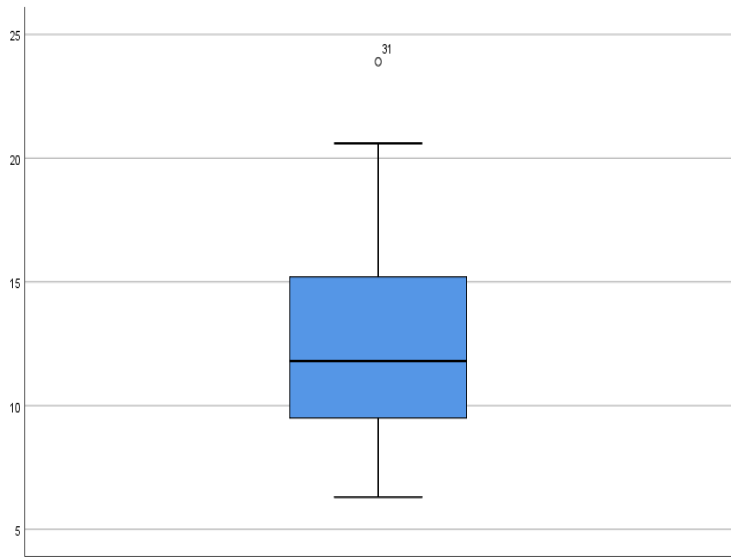


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studyingHours Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

    14,00         0 .  66777888888899
    22,00         1 .  0000000111122222333444
    12,00         1 .  555556667779
     1,00         2 .  0
     1,00 Extremes    (>=24)

 Stem width:     10,00
 Each leaf:       1 case(s)
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Most of the values in range of 10,0 – 10,5.

Comments of Graph Shape:

In this table, mean > median.

So, This table is "right-skewed" and asymetric.

Values in this table, morstly gathered from left side

and it reached peak at 10 - 11 hours. Graph is unimodal.

Kurtosis coefficient > 0. So, graph is leptokurtic.

There is one value outside of whiskers. So, there is an outlier

in this graph and it is "23.90" (max value).

In stem-and-leaf plot, we see most of the values in 10,0 – 10,5

In boxplot, we see that median is not in the middle of the box.
It is lower than middle. So, our graph is positive skewed.

Statistics

studyingHours

N	Valid	50
	Missing	0
Mean		12,3840
Median		11,8000
Mode		8,30[a]
Std. Deviation		3,89449
Variance		15,167
Skewness		,660
Std. Error of Skewness		,337
Kurtosis		,231
Std. Error of Kurtosis		,662
Minimum		6,30
Maximum		23,90
Percentiles	25	9,3500
	50	11,8000
	75	15,2000

a. Multiple modes exist. The smallest value is shown

Other Comments

Variance is low. So data values are near from mean.

Q1:
%25 of values are smaller than 9.35 and
%75 of values are larger than 9.35.

Q2:
%50 of values are smaller than 11.80 and
%50 of values are larger than 11.80.

Q3:
%75 of values are smaller than 15.20 and
%25 of values are larger than 15.20.

In the graph there are 4 modes with frequency of 3 : 8,30 – 13,80 – 15,20 – 16,20 .