



**L** OVELY  
**P** ROFESSIONAL  
**U** NIVERSITY

## **Academic Task Number: 03**

**Name of the faculty member : Dr. Mohammad Nasir : 26795**

|                                    |                                       |
|------------------------------------|---------------------------------------|
| <b>Course Code: MGN 909</b>        | <b>Course Title: Workshop on SPSS</b> |
| <b>Academic Task No: CA-03</b>     | <b>Academic Task Type: OFFLINE</b>    |
| <b>Date of allotment: 05-11-22</b> | <b>Date of submission: 14-11-22</b>   |
| <b>Student Roll No: RK0E49A09</b>  | <b>Student Reg. No: 12002666</b>      |
| <b>Term: 01</b>                    | <b>Section: KOE49</b>                 |
| <b>Maximum Marks: 30</b>           | <b>Marks. Obtained:</b>               |
| <b>Evaluation Parameters</b>       | <b>Nature: Individual</b>             |

### **Declaration:**

**I declare that this Assignment is my individual work. I have not copied it from any other student's work or from any other source except where due acknowledgement is made explicitly in the text, nor has any part been written for me by other person.**

**Student's Signature:**

*P. Harish Chowdary*

**Evaluator's Comments (For Instructor's use only):**

| <b>General Observations</b> | <b>Suggestions for Improvement</b> | <b>Best part of assignment</b> |
|-----------------------------|------------------------------------|--------------------------------|
|                             |                                    |                                |

### Question 1 :

**1A :** A psychological scientist is planning a psychological intervention study, but before he proceeds he wants to characterize his participants' stress levels. He tests each participant on a particular stress index, where anyone who achieves a score of 5.0 is deemed to have 'normal' levels of stress. Lower scores indicate less stress and higher scores indicate greater stress. He has recruited 40 participants to take part in the study. Stress scores are recorded in the variable stress score. He wants to know whether his sample is representative of the normal population (i.e., do they score statistically significantly differently from 5.0)

#### Descriptive Statistics

|             | N  | Mean   | Std. Deviation | Minimum | Maximum |
|-------------|----|--------|----------------|---------|---------|
| Stressindex | 50 | 5.7200 | 2.89996        | 1.00    | 10.00   |

#### One-Sample Kolmogorov-Smirnov Test

|                                  |                | Stressindex       |
|----------------------------------|----------------|-------------------|
| N                                |                | 50                |
| Normal Parameters <sup>a,b</sup> | Mean           | 5.7200            |
|                                  | Std. Deviation | 2.89996           |
| Most Extreme Differences         | Absolute       | .126              |
|                                  | Positive       | .126              |
|                                  | Negative       | -.118             |
| Test Statistic                   |                | .126              |
| Asymp. Sig. (2-tailed)           |                | .046 <sup>c</sup> |

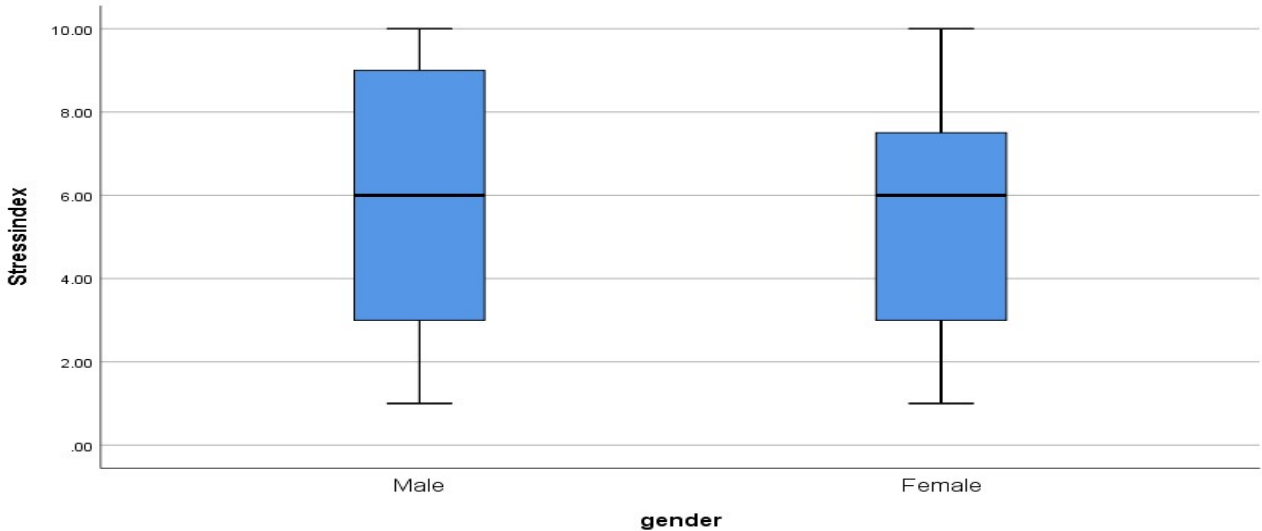
a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

### Case Processing Summary

|             |        | Valid |         | Cases Missing |         | Total |         |
|-------------|--------|-------|---------|---------------|---------|-------|---------|
|             | gender | N     | Percent | N             | Percent | N     | Percent |
| Stressindex | Male   | 18    | 100.0%  | 0             | 0.0%    | 18    | 100.0%  |
|             | Female | 32    | 100.0%  | 0             | 0.0%    | 32    | 100.0%  |



### One-Sample Statistics

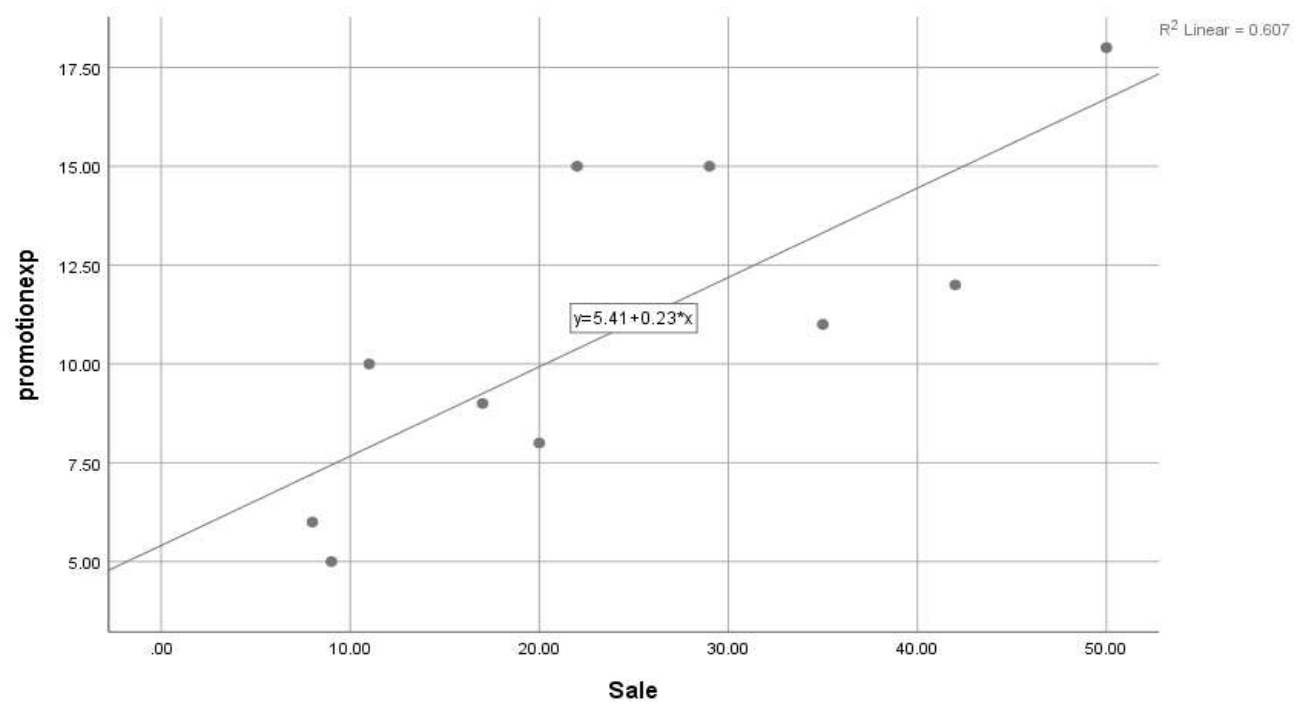
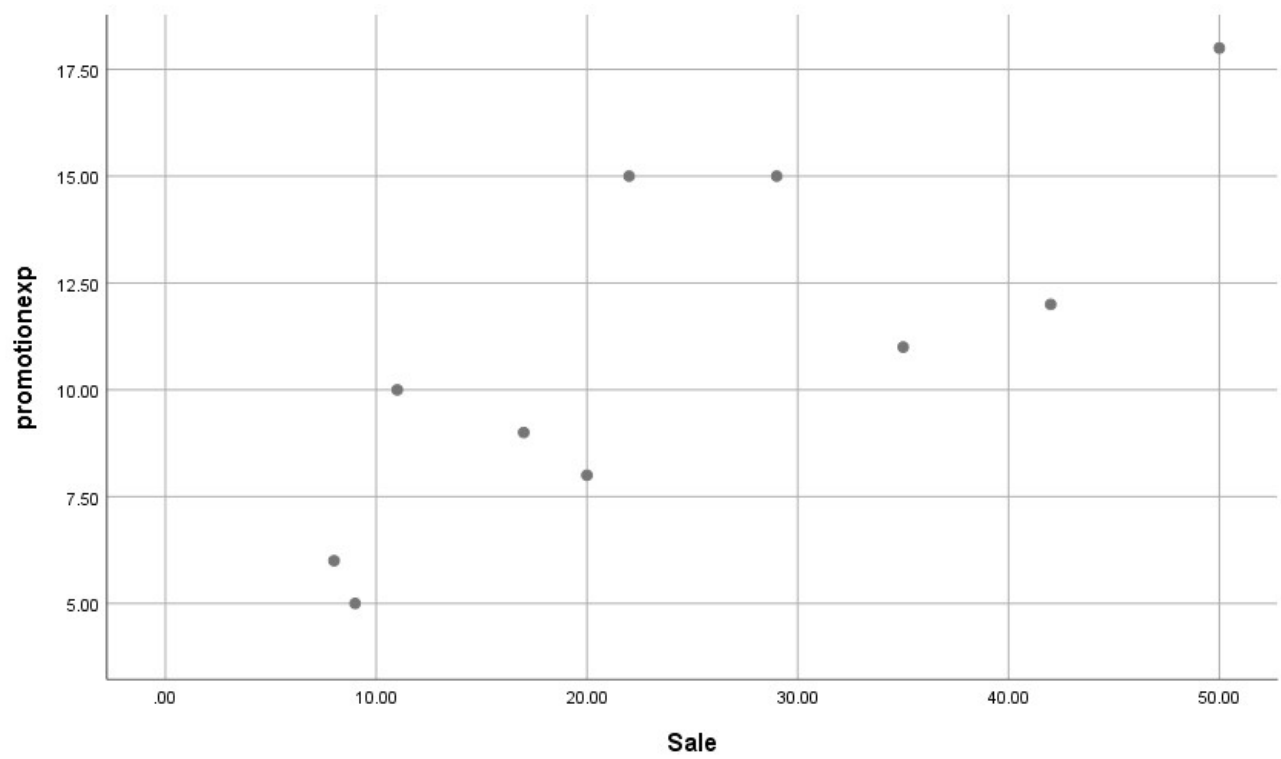
|             | N  | Mean   | Std. Deviation | Std. Error Mean |
|-------------|----|--------|----------------|-----------------|
| Stressindex | 50 | 5.7200 | 2.89996        | .41012          |

### One-Sample Test

Test Value = 5

|             | t     | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|-------------|-------|----|-----------------|-----------------|---|--------|
|             |       |    |                 |                 | Lower                                     | Upper  |
| Stressindex | 1.756 | 49 | .085            | .72000          | -.1042                                    | 1.5442 |

**1B :** Reliance industries ltd facing a stiff competition from the rival company Adani India ltd. The company manager Mr. kumar is thinking to revise the marketing plan in order to increase the sale and market share. So, in order to revise the promotional budget, he is interested to figure out does increasing the promotional budget would help him in achieving the above objective or not, or both the things are not related at all, for which he approached a famous young data analyst of Law gate Mr. Sharma. Considering yourself as Mr. Sharma, you are supposed to suggest Mr. Kumar, whether should he consider for increase the promotional budget or not, based on your appropriate analysis for the same, using the past 10 yrs sale and promotional expenditure data.



### Descriptive Statistics

|              | N  | Mean    | Std. Deviation | Minimum | Maximum |
|--------------|----|---------|----------------|---------|---------|
| Sale         | 10 | 24.3000 | 14.39174       | 8.00    | 50.00   |
| promotionexp | 10 | 10.9000 | 4.17532        | 5.00    | 18.00   |

### One-Sample Kolmogorov-Smirnov Test

|                                   |                | Sale                 | promotionexp         |
|-----------------------------------|----------------|----------------------|----------------------|
| N                                 |                | 10                   | 10                   |
| Normal Parameters <sup>a, b</sup> | Mean           | 24.3000              | 10.9000              |
|                                   | Std. Deviation | 14.39174             | 4.17532              |
| Most Extreme Differences          | Absolute       | .163                 | .137                 |
|                                   | Positive       | .163                 | .096                 |
|                                   | Negative       | -.129                | -.137                |
| Test Statistic                    |                | .163                 | .137                 |
| Asymp. Sig. (2-tailed)            |                | .200 <sup>c, d</sup> | .200 <sup>c, d</sup> |

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

### Correlations

|              |                     | Sale   | promotionexp |
|--------------|---------------------|--------|--------------|
| Sale         | Pearson Correlation | 1      | .779**       |
|              | Sig. (2-tailed)     |        | .008         |
|              | N                   | 10     | 10           |
| promotionexp | Pearson Correlation | .779** | 1            |
|              | Sig. (2-tailed)     | .008   |              |
|              | N                   | 10     | 10           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

1C : In a class of 50 students where the male and female students are in approx equal ration. But the Participation of female's students are very impressive. After Dewali a spss test was conducted in which all the students have performed well. Based on the score of the students the teacher is confused to conclude whether the performance of both are same or different. You are supposed to recommend the teacher whether performance by both are same or not, using appropriate statistical analysis. Detailed and appropriate interpretation of the output.

## Descriptive Statistics

|           | N  | Mean    | Std. Deviation | Minimum | Maximum |
|-----------|----|---------|----------------|---------|---------|
| Spssscore | 50 | 62.8400 | 15.16354       | 18.00   | 97.00   |

## One-Sample Kolmogorov-Smirnov Test

| Spssscore                         |                |                      |
|-----------------------------------|----------------|----------------------|
| N                                 |                | 50                   |
| Normal Parameters <sup>a, b</sup> | Mean           | 62.8400              |
|                                   | Std. Deviation | 15.16354             |
| Most Extreme Differences          | Absolute       | .077                 |
|                                   | Positive       | .053                 |
|                                   | Negative       | -.077                |
| Test Statistic                    |                | .077                 |
| Asymp. Sig. (2-tailed)            |                | .200 <sup>c, d</sup> |

a. Test distribution is Normal.

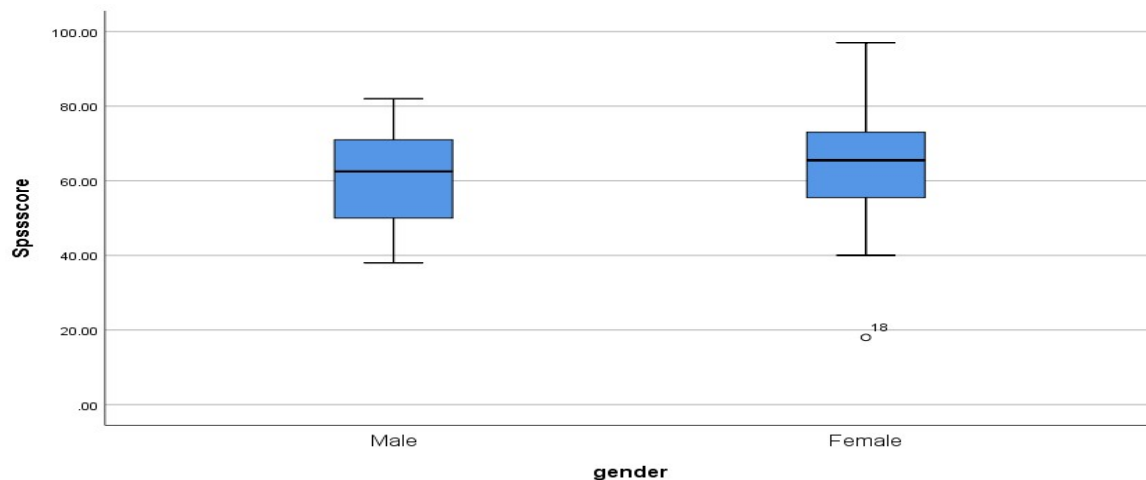
b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

## Case Processing Summary

|           |        | Valid |         | Cases Missing |         | Total |         |
|-----------|--------|-------|---------|---------------|---------|-------|---------|
| gender    |        | N     | Percent | N             | Percent | N     | Percent |
| Spssscore | Male   | 18    | 100.0%  | 0             | 0.0%    | 18    | 100.0%  |
|           | Female | 32    | 100.0%  | 0             | 0.0%    | 32    | 100.0%  |





### Group Statistics

|           | gender | N  | Mean    | Std. Deviation | Std. Error Mean |
|-----------|--------|----|---------|----------------|-----------------|
| Spssscore | Male   | 18 | 61.5000 | 12.56629       | 2.96190         |
|           | Female | 32 | 63.5938 | 16.58966       | 2.93266         |

### Independent Samples Test

|           |                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |        |                 |                 |                       | 95% Confidence Interval of the Difference |         |
|-----------|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|---------|
|           |                             | F                                       | Sig. | t                            | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower                                     | Upper   |
| Spssscore | Equal variances assumed     | .538                                    | .467 | -.465                        | 48     | .644            | -2.09375        | 4.50377               | -11.14919                                 | 6.96169 |
|           | Equal variances not assumed |   |      | -.502                        | 43.660 | .618            | -2.09375        | 4.16814               | -10.49594                                 | 6.30844 |