## PRACTICAL FIVE: ANALYSIS TOOLPAK OF MICROSOFT EXCEL (IV)

1. Generate a one-way ANOVA problem and corresponding data
2. Set the hypothesis for the problem
3. Give a step by step procedure for running the analysis with Analysis Toolpak of Microsoft Excel
4. Give the Microsoft Excel data structure for the analysis
5. Run the Analysis and give the ANOVA table
6. Give the decision rule and conclusion based on the result in (e) above.

SOLUTION

MTS101 has better performance than GNS101. A random sample of score of two courses was taken from 12 departments to ascertain this claim.

|  |  |  |
| --- | --- | --- |
| Departments | MTS101 | GNS101 |
| PHS | 90 | 54 |
| STS | 45 | 66 |
| CHM | 77 | 86 |
| MTS | 54 | 89 |
| FST | 23 | 12 |
| WMA | 98 | 43 |
| MTE | 36 | 34 |
| CVE | 86 | 65 |
| NUD | 12 | 23 |
| CSC | 22 | 65 |
| PRM | 19 | 99 |
| PBST | 33 | 45 |

Null Hypothesis, Ho: **MTS101 has better performance than GNS101**.

Alternative Hypothesis, Hi: **MTS101 has less performance than GNS101**.

After inputting your data in the Excel analysis toolpak, then follow the following procedures:

* From the menus, select

Data > Data Analysis > Anova: Single Factor

* Click OK
* Then it brings you to a dialog box where you input the range of values you working with (don’t include the headings). Then select the Labels in first row. Leave the Alpha value to be 0.05.
* Then select the output range and left click on the red tab and click on any free part on the spreadsheet where you want the analysis to show.
* Click OK.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ANOVA |  |  |  |  |  |  |
| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
| Between Groups | 676.5455 | 1 | 676.5455 | 0.821204 | 0.375617 | 4.351244 |
| Within Groups | 16476.91 | 20 | 823.8455 |  |  |  |
|  |  |  |  |  |  |  |
| Total | 17153.45 | 21 |  |  |  |  |

Since F-value is less than the F-crit value and the P-value is larger than the alpha value. We therefore accept the Null Hypothesis, Ho that says “**MTS101 has better performance than GNS101**”.