**GB513: Business Analytics**

Unit 1: Assignment

**In this assignment, you will be assessed based on the following outcome:**

**GB513-1:** Illustrate business situations through graphs and tables.

This assignment requires you to use Excel to answer the questions and create the charts as specified in the file below. However, when presenting reports in business, you will find that most managers will prefer to read Word documents or PowerPoint slides rather than go through Excel sheets. Being able to move your work from Excel to Word is a valuable skill. For this assignment, prepare a report by copying all your charts and comments to a Word document and submit that Word file as your assignment.

You still need to submit the Excel file you used to generate your answers, in addition to the report in Word. Failure to submit the Excel file will result in a 20 point deduction.

# Using Data Analysis in Excel

In order to run the descriptive statistics tool in Excel, the data analysis toolpak needs to be enabled. If you do not see the "data analysis" button in the DATA section of your Excel toolbar, you need to change an option in Excel's options. There are lots of guides on how to do this for all versions of Excel on the Internet, including videos. Do a search for "how to enable data analysis toolpak in Excel" and follow the directions.

# Question 1

According to T-100 Domestic Market, the top seven airlines in the United States by domestic boarding in a recent year were Southwest Airlines Co. with 81.1 million, Delta Air Lines Inc. with 79.4 million, American Airlines, Inc. with 72.6 million, United Airlines, Inc. with 56.3 million, Northwest Airlines Corp. with 43.3 million, US Airways with 37.8 million, and Continental Airlines with 31.5 million. Using Excel, construct a pie chart and a bar graph to depict this information.

# Question 2

The U.S. Department of the Interior releases figures on mineral production. The following are the 15 leading states in nonfuel mineral production in the United States in 2008.

|  |  |
| --- | --- |
| State  | Value ($billions)  |
| Arizona  | 8.95  |
| Nevada  | 6.48  |
| Florida  | 4.2  |
| Utah  | 4.17  |
| California  | 4  |
| Texas  | 3.8  |
| Minnesota  | 3.72  |
| Alaska  | 2.98  |
| Missouri  | 2.58  |
| Colorado  | 2.55  |
| Michigan  | 2.55  |
| Wyoming  | 2.37  |
| Georgia  | 2.05  |
| New Mexico  | 1.81  |
| Pennsylvania  | 1.68  |

1. Using the appropriate tool in the data analysis toolpack in Excel, calculate the descriptive statistics. Include the summary statistics table in your report.
2. In order to understand the report, we must start by learning what the metrics mean. Briefly define the meaning of all of the metrics in the summary report you get.
3. Defining the metrics is only the first step. We must be able to interpret them as well- each metric provides information on a different aspect. Comment on all of the figures in the report. What are they telling you about the symmetry or skew in the data set? Is the data peaked or flat? Outliers? Justify your answers by referencing the appropriate metrics in the table you generated.

# Question 3

Suppose Procter & Gamble sells 20 million bars of soap per week, but the demand is not constant and production management would like to get a better handle on how sales are distributed over the year. Let the following sales figures given in units of million bars represent the sales of bars per week over 1-year (in no particular order).

1. Construct a histogram chart to represent the data using the appropriate tool from the data analysis tool pack. Make sure to specify your own bin ranges otherwise Excel will automatically pick them for you and you will have very strange bin ranges with confusing decimal points. Make a list of numbers in multiples of 5, starting from 10 up to 40; then, show where the bin numbers are in the histogram dialog box.
2. Creating a chart is not useful in and of itself unless it is properly interpreted. Write a brief analysis of the graph. What do you see in the graph that might be helpful to the production and sales people? This question is about interpretation and use of information; do not simply repeat what’s in the chart.

|  |  |  |  |
| --- | --- | --- | --- |
| 17.1  | 14.3  | 17  | 25.2  |
| 14.4  | 12.2  | 11.9  | 26.3  |
| 15.4  | 10.9  | 12.8  | 13.5  |
| 17.4  | 21.5  | 39.8  | 30.6  |
| 15  | 20.4  | 20.7  | 25.2  |
| 13.8  | 20.3  | 21.3  | 26.2  |
| 20.6  | 13.8  | 22.5  | 26.9  |
| 18.4  | 23.6  | 21.4  | 32.8  |
| 20  | 19.1  | 23.4  | 26.3  |
| 20.9  | 20.4  | 23.1  | 26.6  |
| 11.1  | 15.4  | 14.8  | 24.3  |
| 12.5  | 20.3  | 21.4  | 26.2  |
| 14.7  | 24.4  | 24  | 23.8  |

**Directions for Submitting Your Assignment**

**In all assignments, your answers must be justified by referencing the appropriate figures, metrics and charts. Your work is evaluated on this justification that demonstrates your understanding of the concepts. Just putting down the correct response without justification is not sufficient.**

Submit your Word and Excel files to the Dropbox. The table below shows how your work will be evaluated.

|  |  |  |
| --- | --- | --- |
| **Unit 1 Assignment**  |  |  |
| **Criteria**  | **Points Possible**  | **Points Earned**  |
| **Question 1:** Correct pie chart.  | 6  |   |
| **Question 1**: Correct bar chart.  | 6  |   |
| **Question 2a**: Correct descriptive output.  | 6  |   |
| **Question 2b**: Explanation of each metric in the summary statistics for Question 2.  | 6  |   |
| **Question 2c**: Appropriate analysis of the resulting figures in the report based on the data set for Question 2.  | 8  |   |
| **Question 3a**: Correct histogram.  | 8  |   |
| **Question 3b**: Analysis of the graph that would be helpful to the production and sales people.  | 6  |   |
| Proper report formatting submitted as a Word file.  | 4  |   |
| **Total**  | **50**  |   |