

BBUS1001 Data Analytics Concepts

Assignment 1: Effective Data Analytics and Visualisation Using Excel

Assignment Type: Individual

Weight: 25%

Due date: End of Week 6 (date to be confirmed)

Overview

Over the past few weeks, you have gained a general understanding of the use of spreadsheets in business. This assignment will provide you with an opportunity to demonstrate what you learned so far through a spreadsheet file named Alpha_Ecommerce.xlsx.

Assignment Requirements

The given Alpha_ECommerce.xlsx workbook comprises of four worksheets, namely Order, Query, CustomerSales and ProductCategory.

The Order worksheet is the main sheet containing the business data of the Brazilian E-commerce company Alpha ECommerce from 2016 to 2018. Each row in the worksheet includes information of one line in a customer order. Therefore, an order ID may appear in multiple rows.

Start by exploring the contents of the workbook to understand the meaning of the data, then apply data analytics to support decision making.

Submit ONE Excel file, which includes all the answers for the following questions.

1. (10 marks) Let's do some simple exploration. Turn the data in the Order sheet into a table and write formulas to answer the questions listed in the Query worksheet.

2. (20 marks) The company manager wants to get an insight about customers from different countries.

a. (5 marks) In the CustomerSales sheet: Write formulas to fill the Customer Order City column with the City recorded in the Order sheet.

b. (5 marks) In the CustomerSales sheet: Write formulas to fill the Payment Total column with the total payment amount for each customer based on the data in the Order sheet. (Hint: use SUMIF)

c. (10 marks) In a new worksheet: Create a pivot table and a pivot bar chart showing the total customers sales of the top ten cities. Apply appropriate format and sorting to make the report comprehensive. Write a short paragraph (max 150 words) to describe your insight.

3. (15 marks) The manager wants to learn more about Sao Paulo and Salvador customers. In a new worksheet:

a. (5 marks) Extract or copy the Payment Total data of Sao Paulo and Salvador customers from the CustomerSales sheet into two columns. Use Data analysis tool to display the descriptive statistics of Payment Total in each city. (Hint: Apply filter and copy data of each group from the CustomerSales sheet into a new column in the new sheet).

b. (5 marks) Draw boxplots to compare the sales data distributions of the two customer groups. Provide meaningful information and appropriate format to make the visualisation comprehensive.

c. (5 marks) Write a short paragraph (max 150 words) to describe your insight about the two customer groups with screenshots of summary statistics and the boxplot.

4. (45 marks) The manager wants to learn more about the performance of each product category.

a. (5 mark) In the Order sheet: You can find that the Product Category column is shown in Portuguese, so in order to help us understand the data for analysis, write a formula to fill the Product Category English column using the information provided in the ProductCategory sheet. (Hint: use XLOOKUP)

b. (20 marks) She wants to have a closer look at the monthly performance of the “health_beauty” product category. Let create a pivot table and chart in a new sheet showing monthly total sales of this product category

(based on Order Date). Provide meaningful information and appropriate format to make the report comprehensive. Write a short paragraph(max 150 words) to describe your insight of this product category sales.

c. (20 marks) She wants to predict the monthly sales of the “health_beauty” product category in the last six months of 2018. Let build a linear regression model and use it to provide the required prediction based on the summarised data obtained in Question 4.b. Show the result in a table and a chart in the same worksheet created in Question 4.b.

Marking rubrics

The marker in assessing your work will use the following marking guide.

Please have a look to understand what you need to cover for each question in this assignment.

- Full marks for the correct and well-presented answer. Half of the mark for something close.
- You MUST show the formula to answer for the question that requires to write formula.
- For pivot tables and pivot charts, well-presented means
 - o Having clear and meaningful titles, headers, labels, legends,
 - o Data is formatted appropriately.
 - o Tables and charts are formatted nicely.
- For short answers (you should present below the graph in your Excel file) and well-presented means easy to read, comprehensive and compact.