IMARTICUS LEARNING

Spend Analytics

DATA SCIENCE PRODEGREE PROJECT

ABSTRACT

In this project, you will analyze and classify the spend data for the procurement function of a company. This will enable the company to identify the scope for efficiency improvement and better strategic planning.

The output of this project will be 2 reports:

1. The first report will contain a brief on how the entire process of data pre-processing, feature engineering, predictive analytics, descriptive analytics and data visualization was undertaken.
2. The second report will have all the results, dashboards, model scores and the conclusion of what the student think is happening in the data provided and how the company can profit from it.

Market Outlook

In today's digitalized world procurement has become the most important tool to harness the power of data and draw intelligent insights to achieve and optimize overall performance for an organization. Leading organizations across the globe have pulled various discussions in order to align procurement strategies with the enterprise. As procurement moves from being a support function to playing a strategic role, many believe in using predictive and descriptive analytics in order to generate more business value. Data Science and Data Visualization have proven effective in streamlining processes and improved decision making.

With the emergence of new function-oriented concepts such as spend analytics and contract analytics; organizations have been able to identify areas where cost can be saved. These concepts have been known for providing a recurring spend visibility which can be the future driving force for a long-term cost optimization strategy.

Overview of the problem

You are a data consultant who have been assigned supply chain management project. The client of this project has procurement data and wants to have some insights of how the request are coming in and how are they being managed, so that he can understand how the request are being raised and processed. You

have the freedom of using any standard technique or methods for generating a report.

You have been provided with a single file which contains data related to procurement transactions for the organization, with several features for analysis.

Objectives:

1. Analyze the data and identify purchasing trends and patterns
2. Identify the cost saving opportunities by using the data of procurement
3. Cluster items that have similar purchasing patterns
4. Create dashboards using any Visualization tool; e.g. Tableau
5. Make a report describing all the findings.

*The report made should contain the results of each technique used from data preprocessing to visualization.

Steps to be followed:

1. Understanding the problem and Objectives
2. Understand the data develop some business sense
3. EDA (if you require in this case)
4. Provide the results and understanding you got by performing exploratory data analysis.
5. Data Cleaning
6. Model building (trying various techniques and at the end justify why you choose a technique over the others)
7. Testing and cross validation
8. Find the results, recommendation and visualizations
9. Bonus: Any other insight or recommendation that you can give from the data which will help the business(optional)
10. Preparing the deck

The final solution should be in the form of a deck showing all the steps above. It will be judge on the following criteria:

- How well you have adhered to the modeling process discipline.
- Do your results make business sense, how have you used business intuition to take decision during the modeling exercise, including but not limited to the following?
    - Deciding Segmentation (in case you choose it)
    - EDA and Feature engineering
    - Variable and Model selection
- Performance of your model
    - Precision, Recall, Accuracy, AUC
    - Loss avoided by each model
- Dashboards created
    - Visualization; Pie chart, Graphs, Bar cart
- Report presentation

Grading System

The project and presentation will be assessed & graded on completion. Details on this will be provided separately.