**Supplier Bankruptcy Risk Assessment and Modeling**

**Introduction**

In this problem, we would like to assess the bankruptcy risk of potential suppliers. For that purpose, we have collected data related to past instances of bankruptcy of suppliers. The data consists of data related to bankrupt as well as solvent suppliers for comparison purposes. The objective of the project is to build a risk assessment model for potential bankruptcy of suppliers. Bankruptcy of suppliers is a key source of supply chain disruption. A primary purpose of supply chain planning is to assess disruption risk and plan for alternatives. The variables in the dataset are:

**Response Variable**

**Bankruptcy:** Bankruptcy status of suppliers. 1 indicates if the supplier had declared bankruptcy in the past, 0 otherwise.

**Predictor Variables**

**SupplierID**: ID of the supplier in the data base.

**NumberOfCustomers**: Number of corporate customers that the supplier currently has.

**AverageShareofBusiness**: Mean share of business that the supplier has maintained in the last 5 years

with its corporate customers.

**AverageSizeofSuppliers**: Aerage size of sub-suppliers that the supplier works with.

**AverageSizeofCustomers**: Average size of customers that the supplier works with.

**CAGRBusiness**: CAGR of the supplier’s business in the past 5 years.

**TechnologyInvestment**: Average technology investment that the supplier makes in Mn $.

**CountryGDP**: Average GDP of the country where the supplier is primarily located (in ’10 Mn $)

**CountryGDPGrowth**: CAGR growth rate of the country where the supplier is primarily located.

**IndexOfPoliticalTurmoil**: An index indicating probability of political turmoil and disturbance.

**IndexOfSocialTurmoil**: An index indicating probability of social (including violent and terroristic) turmoil and disturbance.

**NumberofProducts**: Number of product lines that the supplier sells.

**NumberofNewProducts**: Number of new products developed in the past few years.

**ProfitabilityLast5Years**: Average profitability of the supplier in the past 5 years.