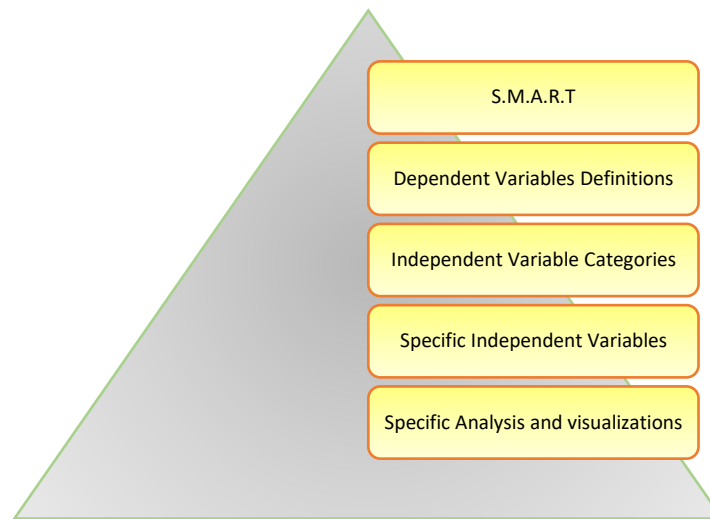# Structured Pyramid Analysis Plan

S.M.A.R.T:

SPECIFIC:

- We will be analyzing all relevant customer data and develop focused customer retention program.
- We need to achieve this by performing Data cleaning, Exploratory Data Analysis, Visualization and various modelling techniques.
- We want to achieve this goal so that the Telecom services get an idea why and because of what factors they have customers churn.
- The resources and techniques involved are R and R Studio.
- We are a group of three performing Multivariate Analysis on Telecom Customer Churn Dataset.

MEASURABLE:

- Measure the project progress weekly on the basis of completion of assigned task.
- Assess the progress to meet the deadlines and achieve the goal.
- Meeting the weekly task and being on schedule will make sure that we are accomplishing the goal.

ACHIEVABLE:

- We can achieve this goal by performing relevant operations on dataset such as understanding the dataset, check for values and data types , planning, data cleaning and exploratory data analysis and visualization.

RELEVANT:

- Doing this project is worthwhile because the Telecom services will get an idea why and because of what factors they have customers churn.
- The need for this is to help Telecom services reduce their customer retention rate.

TIME-BOUND:

- Set a deadline to meet your goals.
- To achieve the end result or goal as per the deadline we need to prioritize the steps and tasks.
- We need to plan about our short term and long-term goals.
- What needs to be done today, in a week and in a month.

DEPENDENT VARIABLES DEFINITION:

- Dependent variables are output variables.
- Here the dependent variable is 'Churn'.

INDEPENDENT VARIABLES CATEGORIES:

These are the independent variables or predictors:

- Gender- Whether the customer is male or a female
- Senior Citizen- Whether the customer is senior citizen or not
- Total Charges-The total amount charged to a customer
- Monthly charges- The amount charged to a customer monthly
- Payment Method- The customer's payment method (Electronic check, Mailed check, Bank transfer (automatic), Credit card (automatic))
- Multiple Lines- Whether the customer has multiple lines or not
- Online security- Whether the customer has online security or not
- Streaming TV- Whether the customer has streaming TV or not
- Streaming Movies- Whether the customer has streaming movies or not
- Tenure - Number of months the customer has stayed with the company
- Contract- The contract term of the customer

SPECIFIC QUESTIONS:

- Questions raised:

  - What do we need to analyze ?
  - What does the data contain?
  - What are the factors causing customer churn?
  -Who has more churn rate?(males or females)

SPECIFIC ANALYSIS AND VISUALIZATIONS :

- Statistical tests performed:
  - Hotelling T-test
  - F-test

- Data Visualizations:
  - Box Plot
  -Scatter Plot
   -Histogram
  - Strip Plot
  -Chi Plot
  -Scatter Plot Matrix
  - Correlation matrix
  - Covariance matrix
  - Heat Map