**Advertisement project**

When a company enters a market, the distribution strategy and channel it uses are keys to its success in the market, as well as market know-how and customer knowledge and understanding. Because an effective distribution strategy under efficient supply-chain management opens doors for attaining competitive advantage and strong brand equity in the market, it is a component of the marketing mix that cannot be ignored .

The distribution strategy and the channel design have to be right the first time. The case study of Sales channel includes the detailed study of TV, radio and newspaper channel.

1. Problem Definition

* The predict the total sales generated from all the sales channel.
* We have to predict sales which is integer or float,so We have to use regression algorithm for predicting purpose.

2. Data Analysis.

* The dataset has 200 rows and 5 columns.
* No Null values are present in the Dataset.
* As Unnamed 0: column has same value as index number so we may drop that column.

3.Exploratory Data Analysis

* TV is highly positive corelated with sales followed by Radio and NewsPaper.
* Some skewness is present in the Newspaper column,so we have to remove it by using power\_transform method.

**4. Pre-Processing Pipeline**

* We have to use make our independent columns standardized by using StandardSaler.

5. Building Machine Learning Models

* We have to use different regressor model(such as LinearRegression(),RandomForestRegressor(),SVR(),XGBoostRegressor() etc.) to predict sales.
* After using different Algorithm We found that ExtraTreesRegressor is the best model for this dataset.So we have to hypertune parameters for better accuracy.

**6. Concluding Remarks**

* After using different Regressor algorithm We found that ExtraTreesRegressor is the best model.
* After Hyperparameter tuning of ExtraTreesRegressor model We get accuracy score of 99.09%.

Github link: https://github.com/salman972/blogs/blob/main/advertisement.ipynb