**INSIGHTS REPORT**

**Before Preliminary EDA :**

The Data was imported into python which contains 85000 rows and 14 columns and then the outliers are detected in each column expect BillDate, TotalDiscount, Generic Name, Subcategory, SubCategoryL3, AnonymizedBillNo, AnonymizedSpecialisation by box plot and the percentage of outliers are also detected by IOR method where we can also get upper\_bound and lower\_bound and the business insights are also been identified like mean, median, mode, standard deviation, variance, kurtosis and skewness.

**After Preliminary EDA :**

After detecting the outliers trimming method is used which is used to remove outliers. After applying the trimming method the the outliers has been removed which results the 85000 rows and 14 columns are decreased in to 74023 rows and 14 columns and the data has been cleaned and it has been analyzed there is no null values and duplicates in the given data.

**Skewness And Kurtosis :**

Before preliminary EDA the values of skewness and kurtosis are very high which indicates there is an presence of outliers and After the Preliminary EDA the values of both skewness and kurtosis has been reduced which is used for proper prediction.

**MEAN :**

The mean values provides the average performance and cost associated with pharmaceutical products. The high mean values of NetSales(963.848227) compared to the totalcost (538.696705) indicates a healthy margin.

**MEDIAN :**

If the median values are lower than the mean values it indicates there is an presence of outliers for example here, the median values for UCPwithoutGST(41.0), MRP(77.12) and NetSales(99.4) are lower than the mean value which means there is an presence of outliers.

**First Business Moment :**

**Mean values:**

|  |  |
| --- | --- |
| TQty | 1.714765 |
| UCPwithoutGST | 301.492077 |
| PurGSTPer | 0.203694 |
| MRP | 617.923185 |
| TotalCost | 538.696705 |
| NetSales | 963.848227 |
| ReturnMRP | 116.061565 |

**MEDIAN VALUES:**

|  |  |
| --- | --- |
| TQty | 1.0 |
| UCPwithoutGST | 41.0 |
| PurGSTPer | 0.0 |
| MRP | 77.12 |
| TotalCost | 77.28 |
| NetSales | 99.4 |
| ReturnMRP | 0.0 |

**MODE VALUES:**

|  |  |
| --- | --- |
| TQty | 0 1 |
| UCPwithoutGST | 0 9.75 |
| PurGSTPer | 0 0 |
| MRP | 0 17.65 |
| TotalCost | 0 10.92 |
| NetSales | 0 0.0 |
| ReturnMRP | 0 0.0 |
|  |  |

**SECOND BUSINESS MOMENT**

**VARIANCE:**

|  |  |
| --- | --- |
| TQty | 10.357809742400722 |
| UCPwithoutGST | 1125901.8014543247 |
| PurGSTPer | 2.651175190845022 |
| MRP | 3168038.762205354 |
| TotalCost | 4531544.065922315 |
| NetSales | 10255711.276845926 |
| ReturnMRP | 1211865.4780047724 |

**STANDARD DEVIATION:**

|  |  |
| --- | --- |
| TQty | 3.2183551299383852 |
| UCPwithoutGST | 1061.0851999035349 |
| PurGSTPer | 1.6282429765993225 |
| MRP | 1779.8985258169505 |
| TotalCost | 2128.742367202362 |
| NetSales | 3202.4539460928904 |
| ReturnMRP | 1100.8476179766083 |

**THIRD BUSSINESS MOVEMENT:**

**SKEWNESS:**

|  |  |
| --- | --- |
| TQty | -15.837146107544879 |
| UCPwithoutGST | 8.688854080429913 |
| PurGSTPer | 8.553829788126803 |
| MRP | 7.069591886335844 |
| TotalCost | 14.18124863820681 |
| NetSales | 8.98366995255872 |
| ReturnMRP | 48.25126037535947 |

**FOURTH BUSSINESS MOVEMENT:**

**KURTOSIS :**

|  |  |
| --- | --- |
| TQty | 2357.49199217925 |
| UCPwithoutGST | 138.10168931765784 |
| PurGSTPer | 80.5838447255364 |
| MRP | 98.16307739216032 |
| TotalCost | 376.76461065920995 |
| NetSales | 145.64830617051908 |
| ReturnMRP | 5617.403034289755 |