Business Intelligence on supermarket sales data taken from Kaggle

Business intelligence can be defined as a data driven solution provided by an expert business team which includes the insights on sales and marketing data, prediction on the sales or another aspect of the business organization, or the profit-making analysis of the given data.

Python's matplotlib Library and the Seaborn library are one of the best libraries which are used in data visualization. Experts good in programming usually use the Python as their tool to asses the given data of any business organization.

1. **Analysis of type of customer**

    a. Members b. Non- members

2. **Analysis of the type of products Non-Member Customers choose**

```
Member    501
Normal    499
Name: Customer type, dtype: int64
<matplotlib.axes._subplots.AxesSubplot a
```

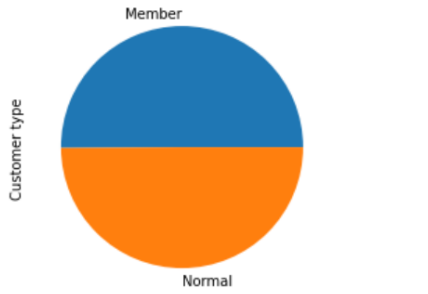

Fig. 1: Analysis of type of customer visiting super market

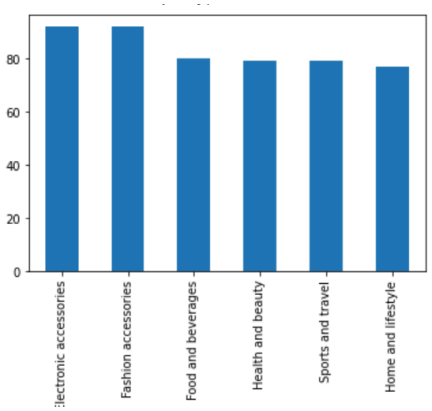

Fig. 2: Analysis of the type of products Non-Member Customers choose

Inference on analysis of type of customer visiting the store: From fig 1. there were equal number of member customers than the non-members.

Inference Analysis of the type of products Non-Member Customers choose: From Fig.2, Top 5 selects / Picks are selected from the non-member choice to derive more insight.

3. **Analysis of purchases made by member customers in super market**
4. **Analysis of the total number of Sale invoice recorded in the following is 1000 [members and non-members incl.]**

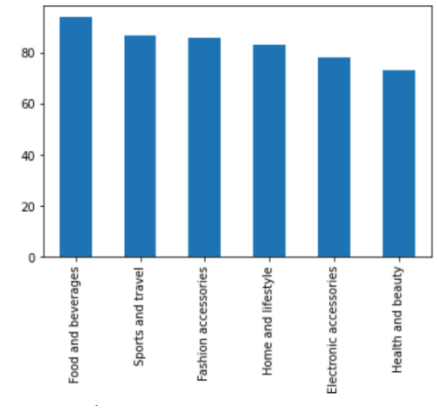

Fig. 3: Analysis of purchases made by member customers in super market

```
Fashion accessories       178
Food and beverages        174
Electronic accessories    170
Sports and travel         166
Home and lifestyle        160
Health and beauty         152
Name: Product line, dtype: int64
```

Fig. 4: Analysis of the total number of Sale invoice recorded per every 1000 sale

Inference: The Members also show similar types of behaviors as that of the Non-Members. Only Difference is the number of people purchasing the health and beauty products are more.

The Preference of Member Customers is more in buying the Electronic accessories and the preferences of Non-Members is mostly on Food and Beverages.

5. **Analysis of the Spending Pattern of members and non-members**

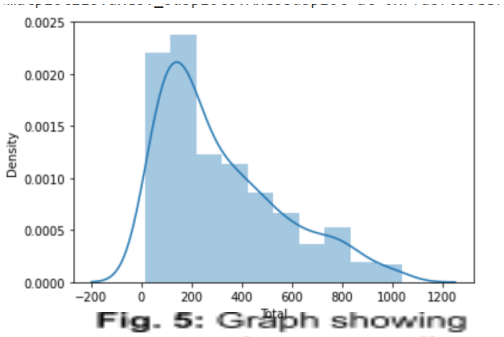

Fig. 5: Graph showing non-members spending pattern

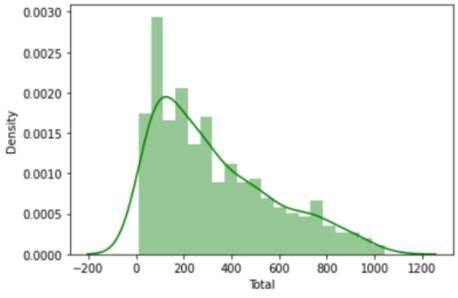

Fig. 6: Graph showing spending pattern of members

Inference: Non-Members spend very less in the range of 800 to 1000.Whereas there are many members who spend in that range

Increasing the way, the members purchase in any particular range can reflect more in terms of profit. So, more offers can be given to members and also product line can also be increases so as to keep customers engaged.

6. **Analysis of effect of Unit Price on the Total amount spent**
7. **Member privileges can benefit the Sales?**

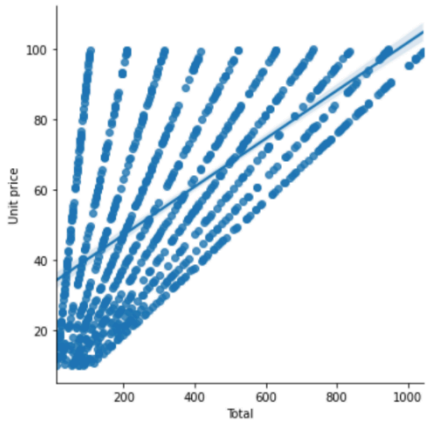

Fig. 7: Graph showing non-members spending pattern

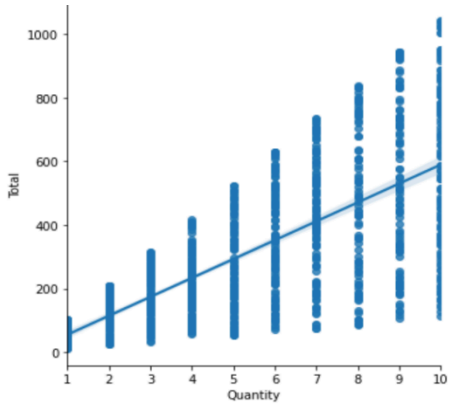

Fig. 8: Graph showing non-members spending pattern

Inference: The Above plot shows that there is a linearity is Total Spend by customers with the unit price. Hence Unit price can only be increased but not decreased. But Increase in unit price may not attract many customers. One of the business solutions can be an option is to provide offers to customers and where the Unit price is too high and increasing the low-priced items can balance the Income. Sometimes giving Discounts on the Products can increase the Quantity Purchased and hence the Total Spend as well

So, Quantity has Linear positive Relationship with the Total. On a whole Increasing the member privileges can benefit the Sales.