

Sparta Python Skills Sprint

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My Process

Data cleaning and
validation

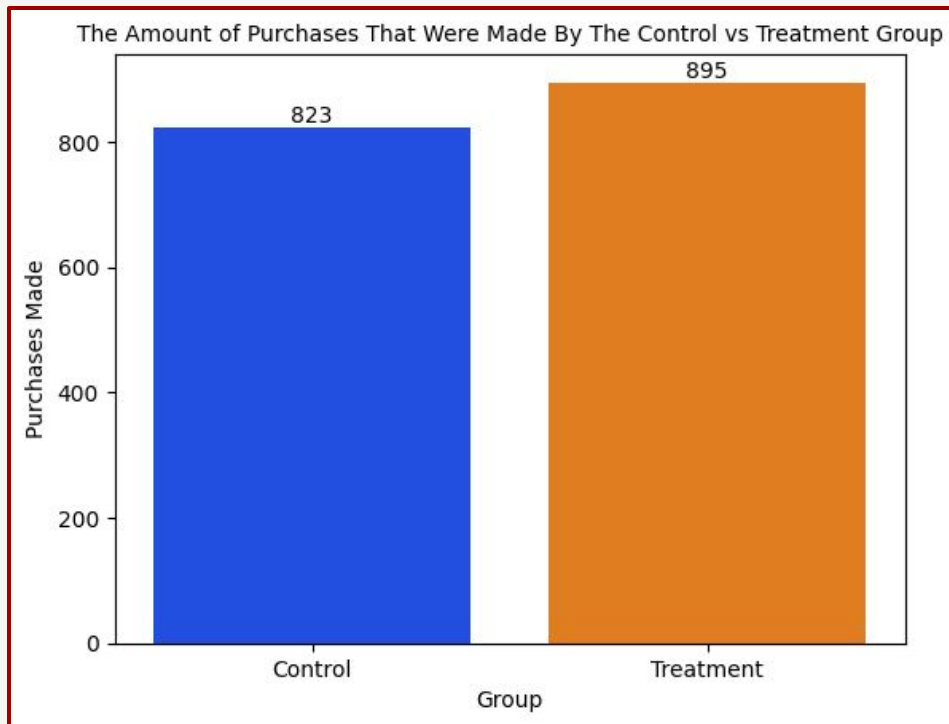
Exploratory analysis
using pivot tables and
summary functions

Create visualisations

Analysis & write up

Visualisations

The Group of Customers Exposed to Treatment Made More Purchases.



```
#a vis to see how many purchases were made by the control and treatment group
```

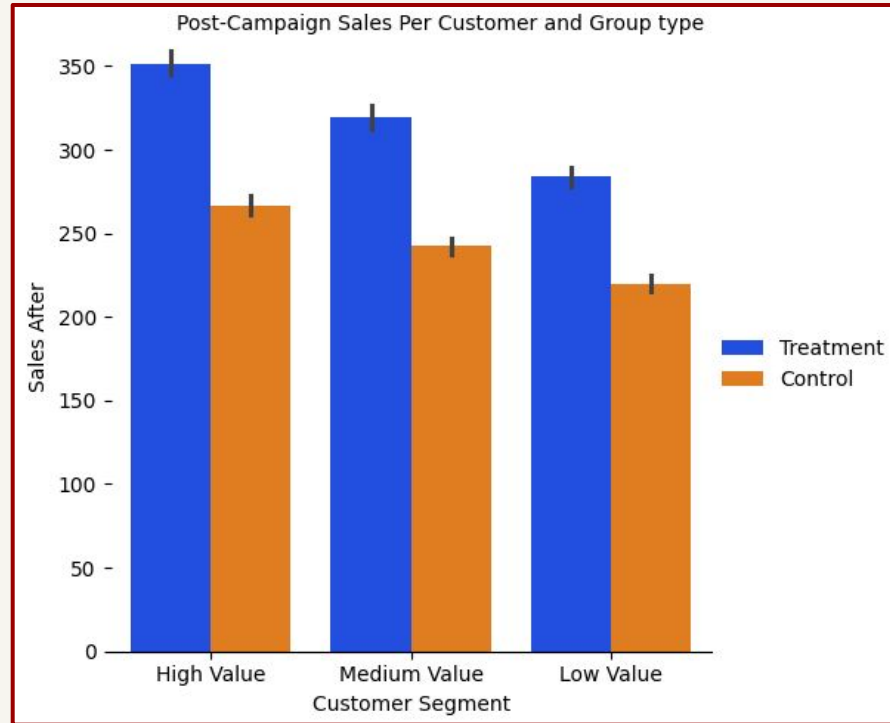
```
#Filtering for only customers that made purchases  
df_true = df_d[df_d['Purchase_Made'] == "Yes"]
```

```
#grouping by the customer group and aggregating by the no. of purchases made  
g=sns.barplot(  
    data=df_true.groupby('Group',  
        as_index=False)['Purchase_Made'].count(  
    ),  
    x='Group',  
    y='Purchase_Made',  
    palette='bright'  
)
```

```
#adding data labels to each bar  
for container in g.containers: # loop through each BarContainer  
    g.bar_label(container, fontsize=10)
```

```
#styling elements  
g.set_ylabel("Purchases Made")  
#g.legend.set_title("")  
g.set_title("The Amount of Purchases That Were Made By The Control vs Treatment Group", fontsize=10)
```

Across all three different customer segments, customers exposed to the treatment/campaign spent more in sales.

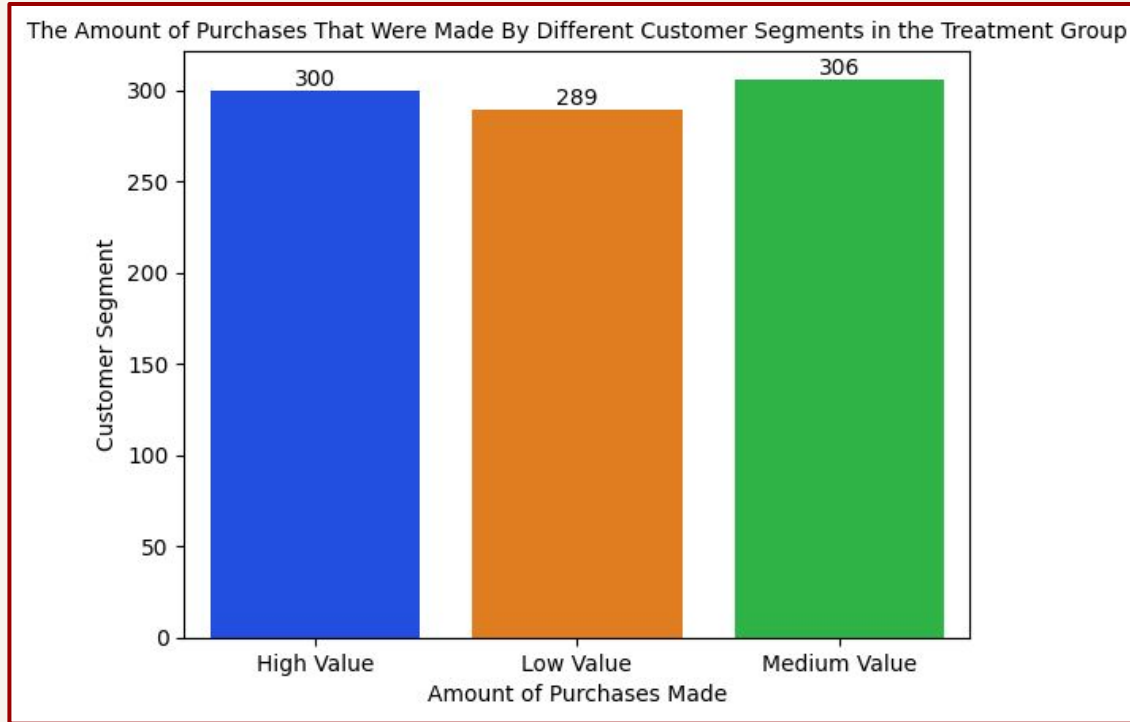


#a vis to see the affect of the campaign on sales in different customer groups

```
#creating a catplot
g=sns.catplot(
    data=df_d, kind='bar',
    x='Customer_Segment',
    y='Sales_After', hue='Group',
    palette='bright'
)
```

```
#styling elements
g.despine(left=True)
g.set_axis_labels("Customer
Segment", "Sales After")
g.legend.set_title("")
g.fig.suptitle("Post-Campaign Sales
Per Customer and Group type",
fontsize=10)
```

Medium Value Customers Made The Most Purchases After Being Exposed To The Treatment. This was closely followed by high value customers.



```
#a vis to see how many purchases were made by  
the different types of customers
```

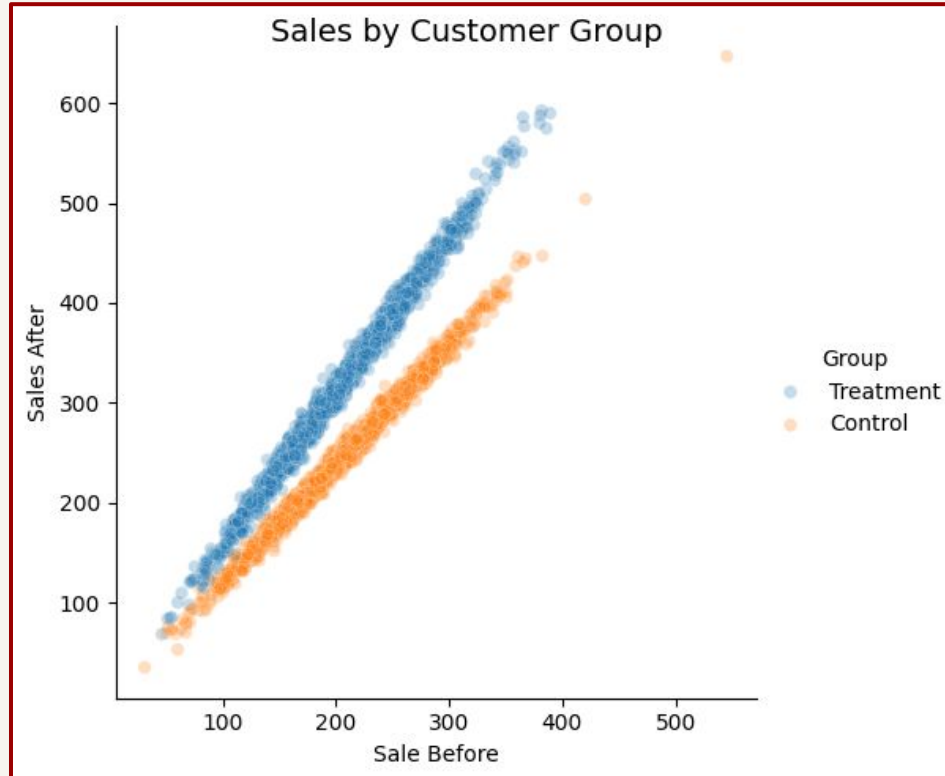
```
#filtering for customers that mad a purchase and  
were exposed to the treatment/campaign  
df_true = df_d[(df_d['Purchase_Made'] == 'Yes') &  
(df_d['Group'] == 'Treatment')]
```

```
#Creating barplot, gorupby by customer segment  
and aggregating by the no. of purchases  
g1=sns.barplot(  
    data=df_true.groupby('Customer_Segment',  
as_index=False)['Purchase_Made'].count(),  
    x='Customer_Segment',  
    y='Purchase_Made',  
    palette='bright',  
    hue='Customer_Segment'  
)
```

```
#creating data labels for each bar  
for container in g.containers:    # loop through  
each BarContainer  
    g1.bar_label(container, fontsize=10)
```

```
#styling elements  
g1.set_xlabel("Customer Segment")  
g1.set_ylabel("Amount of Purchases Made")  
#g.legend.set_title("")  
g1.set_title("The Amount of Purchases That Were  
Made By Different Customer Segments in the  
Treatment Group", fontsize=10)
```

There is a strong positive correlation between the amount or sales made before the campaign and sales made after the campaign across both customer groups.



```
#a vis to see the correlation between sales  
made before the campaign and sales after  
the campaign by customer group
```

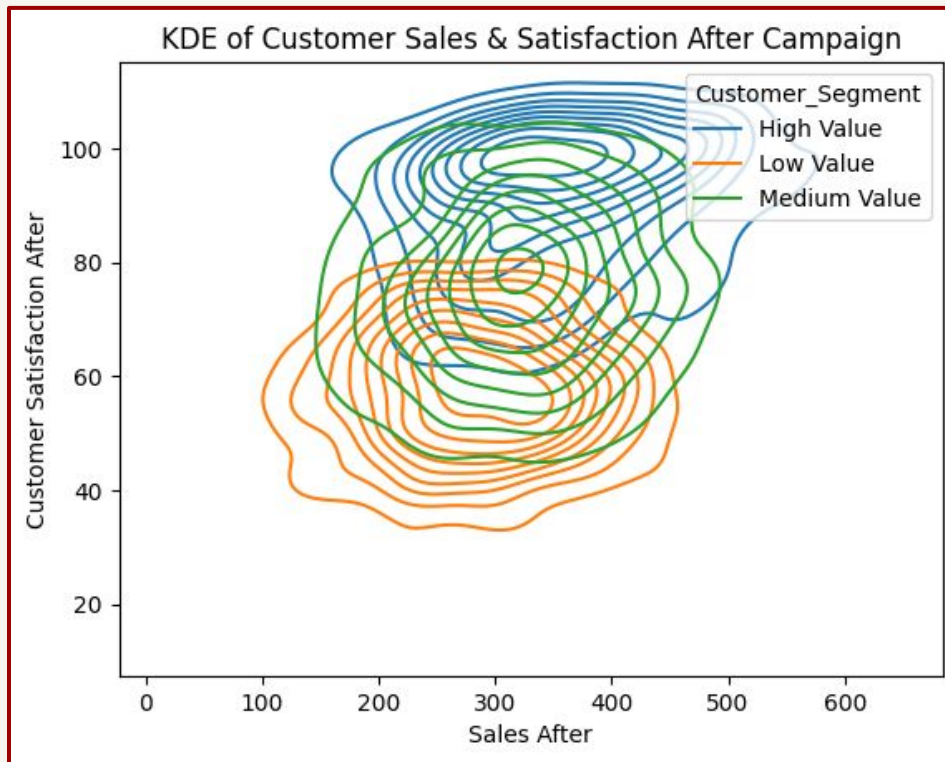
```
#creating scatter plot  
sp = sns.relplot(data=df_d,  
x='Sales_Before', y='Sales_After',  
hue='Group', alpha=.25 )
```

```
#create axis labes and title  
sp.set_axis_labels("Sale Before", "Sales  
After")
```

```
sp.fig.suptitle("Sales by Customer Group",  
fontsize=14)
```

```
#sp.despine(trim=True)
```

Low value customers typically had lower sales and lower satisfaction compared to other customer segments. It was the opposite for high value customers.



```
#Filtering by customers who were  
exposed to the treatment  
df_true = df_d[(df_d['Group'] ==  
'Treatment')]
```

```
#creating the kde plot  
kde_graph = sns.kdeplot(  
    data=df_true,  
    x='Sales_After',  
    y='Customer_Satisfaction_After',  
    hue='Customer_Segment',  
    thresh=.1,  
)
```

```
#styling elements  
kde_graph.set_xlabel("Sales After")  
kde_graph.set_ylabel("Customer  
Satisfaction After")  
kde_graph.set_title("KDE of Customer  
Sales & Satisfaction After Campaign")
```


Thank You