untitled-checkpoint

June 26, 2025

```
[4]: import pandas as pd
     import numpy as np
     import matplotlib.pyplot as plt
     import seaborn as sns
```

```
[5]: #import dataset
     file_path = r"C:\Users\shubh\Downloads\QVI_transaction_data.xlsx"
     transaction_data = pd.read_excel(file_path)
```

```
[7]: transaction_data.head()
```

```
[7]:     DATE  STORE_NBR  LYLTY_CARD_NBR  TXN_ID  PROD_NBR  \
     0  43390          1            1000       1         5
     1  43599          1            1307     348        66
     2  43605          1            1343     383        61
     3  43329          2            2373     974        69
     4  43330          2            2426    1038       108

                                       PROD_NAME  PROD_QTY  TOT_SALES
     0    Natural Chip        Compny SeaSalt175g         2        6.0
     1                  CCs Nacho Cheese    175g         3        6.3
     2    Smiths Crinkle Cut  Chips Chicken 170g         2        2.9
     3    Smiths Chip Thinly  S/Cream&Onion 175g         5       15.0
     4  Kettle Tortilla ChpsHny&Jlpno Chili 150g         3       13.8
```

```
[8]: file_path = r"C:\Users\shubh\Downloads\QVI_purchase_behaviour.csv"
     purchase_behaviour = pd.read_csv(file_path)
```

```
[9]: purchase_behaviour.head()
```

```
[9]:    LYLTY_CARD_NBR               LIFESTAGE PREMIUM_CUSTOMER
     0            1000   YOUNG SINGLES/COUPLES          Premium
     1            1002   YOUNG SINGLES/COUPLES       Mainstream
     2            1003          YOUNG FAMILIES           Budget
     3            1004   OLDER SINGLES/COUPLES       Mainstream
     4            1005  MIDAGE SINGLES/COUPLES       Mainstream
```

[10]:

```
#SUMMARIZE DATA
transaction_data.describe()
```

[10]:

```
                DATE     STORE_NBR  LYLTY_CARD_NBR        TXN_ID  \
count  264836.000000  264836.00000    2.648360e+05  2.648360e+05
mean    43464.036260     135.08011    1.355495e+05  1.351583e+05
std       105.389282      76.78418    8.057998e+04  7.813303e+04
min     43282.000000       1.00000    1.000000e+03  1.000000e+00
25%     43373.000000      70.00000    7.002100e+04  6.760150e+04
50%     43464.000000     130.00000    1.303575e+05  1.351375e+05
75%     43555.000000     203.00000    2.030942e+05  2.027012e+05
max     43646.000000     272.00000    2.373711e+06  2.415841e+06

            PROD_NBR       PROD_QTY      TOT_SALES
count  264836.000000  264836.000000  264836.000000
mean       56.583157       1.907309       7.304200
std        32.826638       0.643654       3.083226
min         1.000000       1.000000       1.500000
25%        28.000000       2.000000       5.400000
50%        56.000000       2.000000       7.400000
75%        85.000000       2.000000       9.200000
max       114.000000     200.000000     650.000000
```

[11]:

```
transaction_data.isnull().sum()
```

[11]:

```
DATE              0
STORE_NBR         0
LYLTY_CARD_NBR    0
TXN_ID            0
PROD_NBR          0
PROD_NAME         0
PROD_QTY          0
TOT_SALES         0
dtype: int64
```

[12]:

```
data_type = transaction_data.dtypes
print(data_type)
```

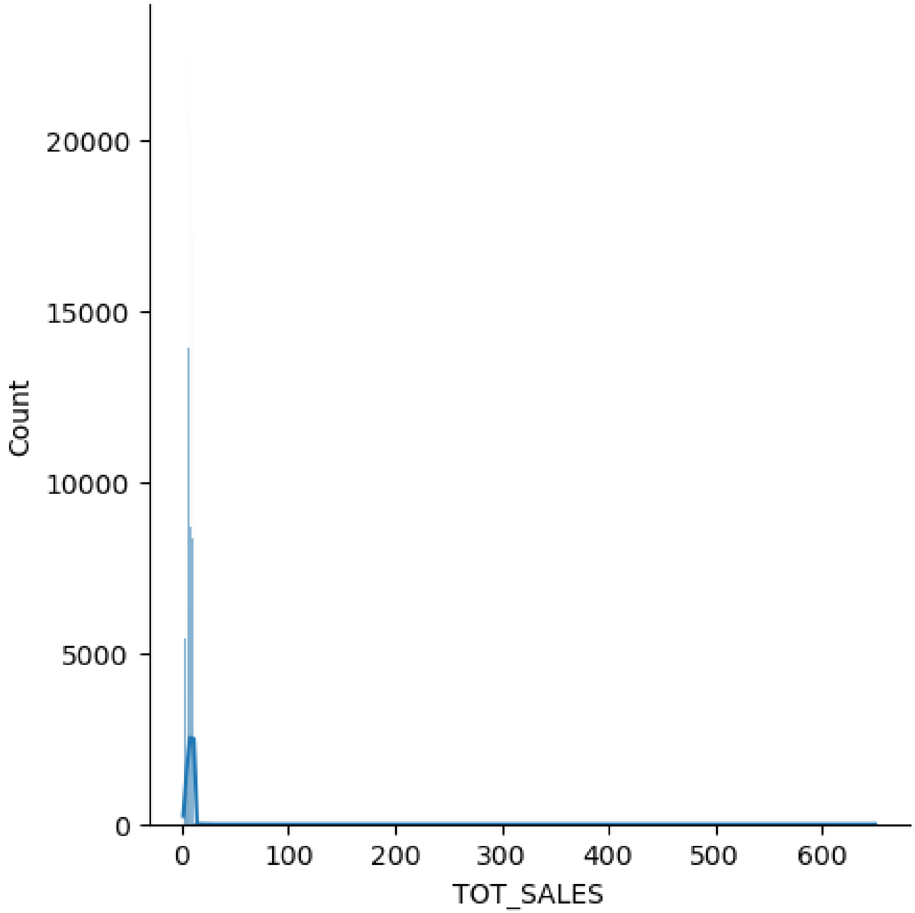
```
DATE                int64
STORE_NBR           int64
LYLTY_CARD_NBR      int64
TXN_ID              int64
PROD_NBR            int64
PROD_NAME          object
PROD_QTY            int64
TOT_SALES         float64
dtype: object
```

#EXAMINE THE OUTLIERS

[13]:
```
import seaborn as sns
import matplotlib.pyplot as plt

sns.displot(transaction_data["TOT_SALES"], kde=True)
```

[13]:
```
<seaborn.axisgrid.FacetGrid at 0x2073ae51070>
```



[14]:
```
numericdata = transaction_data.select_dtypes(['float','int'])
numericdata.head()
```

[14]:
```
    DATE  STORE_NBR  LYLTY_CARD_NBR  TXN_ID  PROD_NBR  PROD_QTY  TOT_SALES
0  43390          1            1000       1         5         2        6.0
1  43599          1            1307     348        66         3        6.3
2  43605          1            1343     383        61         2        2.9
3  43329          2            2373     974        69         5       15.0
4  43330          2            2426    1038       108         3       13.8
```

[20]:

```
x = numericdata[numericdata['TOT_SALES'] > 8.0]
```

[21]:

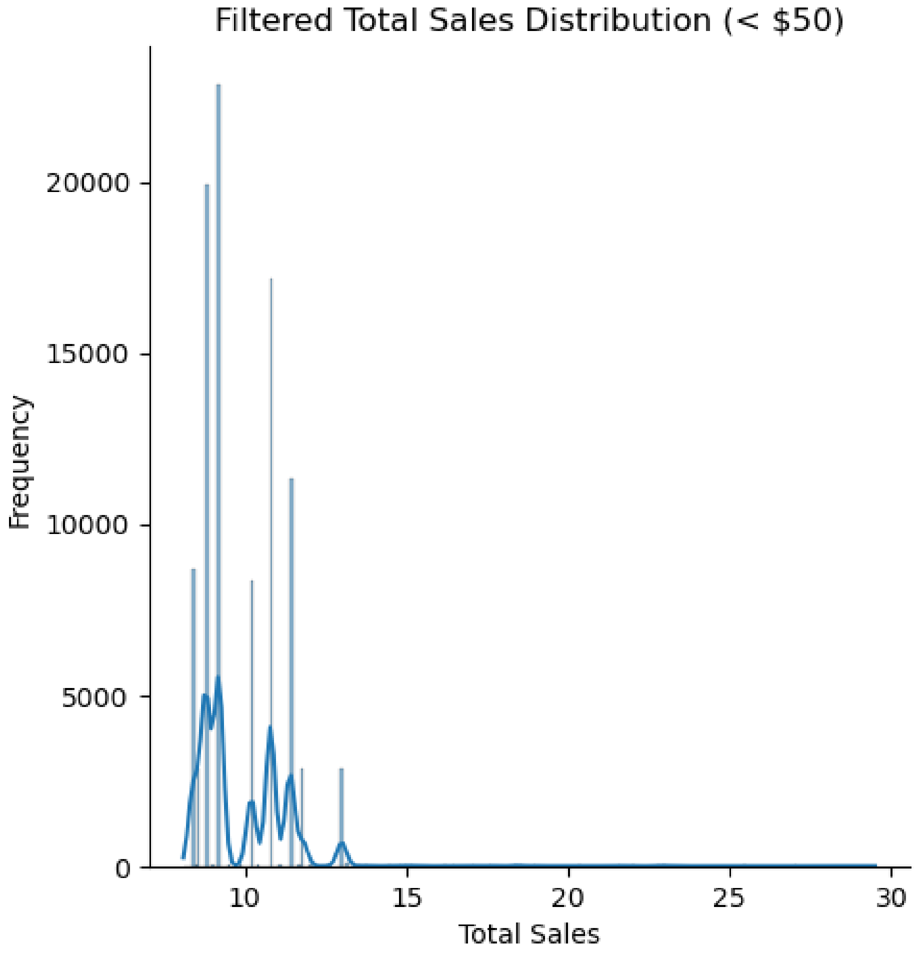
```
print(x.shape)
```

```
(97934, 7)
```

[25]:

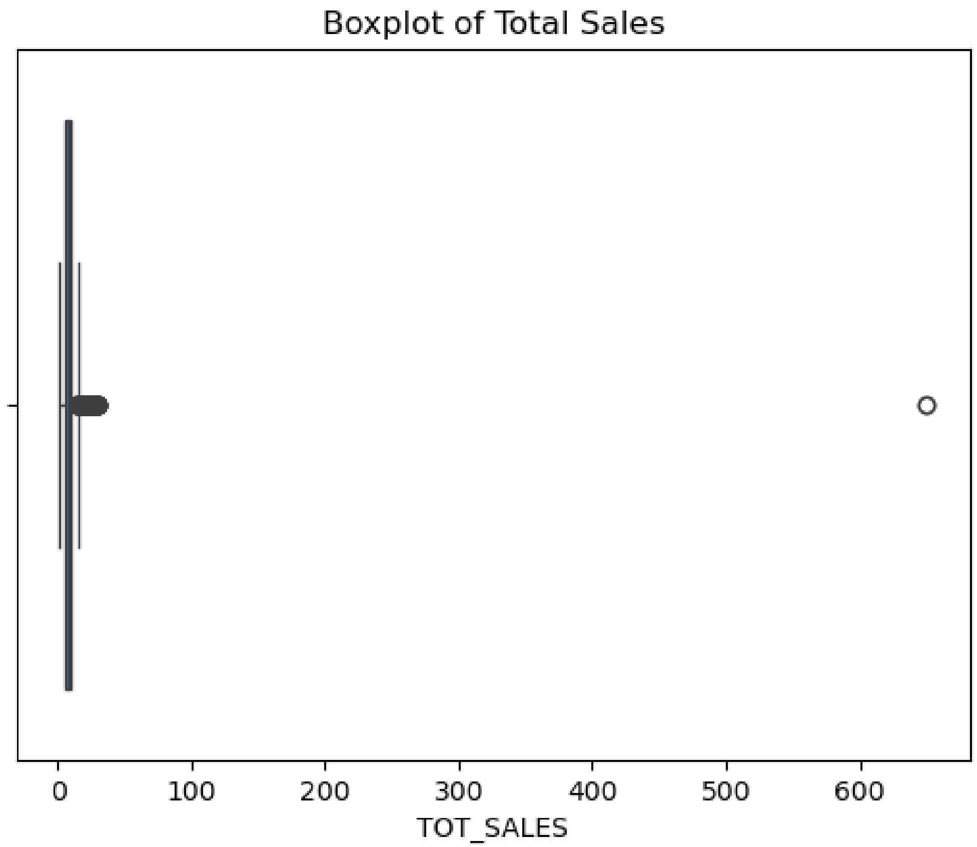
```
# Only include values below 50 to avoid skew
filtered_sales = x[x["TOT_SALES"] < 50]

sns.displot(filtered_sales["TOT_SALES"], kde=True)
plt.title("Filtered Total Sales Distribution (< $50)")
plt.xlabel("Total Sales")
plt.ylabel("Frequency")
plt.show()
```



[27]:

```
sns.boxplot(x=transaction_data["TOT_SALES"])
plt.title("Boxplot of Total Sales")
plt.show()
```



```
[ ]:
```