
E-Commerce Store Analysis

— A Deep Dive into Customer Behavior and Market Trends —

Overview

- Business Problem and Motivation
- Data and cleaning
- Website traffic
- Customer Behavior
- Brand/Product Performance
- Recommendations

Business Problem

- **Objective:** Utilise data-driven insights to succeed in our cosmetic online store, Enhance Customer Journey
- **Focus:**
 - Analyse Website Traffic
 - Understand Customer behaviour
 - Evaluate Product And Brand Performance
- **Motivation:**
 - E-Commerce growth surge in recent years
 - Increased reliance on E-Commerce for making purchases

Data and Cleaning

Merging Dataset

```
Oct_2019=pd.read_csv('2019-Oct.csv')
Nov_2019=pd.read_csv('2019-Nov.csv')
Dec_2019=pd.read_csv('2019-Dec.csv')
Jan_2020=pd.read_csv('2020-Jan.csv')
Feb_2020=pd.read_csv('2020-Feb.csv')
```



```
RangeIndex: 20692840 entries, 0 to 20692839
Data columns (total 9 columns):
#   Column      Dtype
---  ---
0   event_time   object
1   event_type   object
2   product_id   int64
3   category_id  int64
4   category_code object
5   brand        object
6   price        float64
7   user_id      int64
8   user_session object
dtypes: float64(1), int64(3), object(5)
memory usage: 1.4+ GB
```

Dataset Cleaning

Replacing NaN values



event_time

2019-10-01
00:00:24 UTC

appliances.environment.vacuum



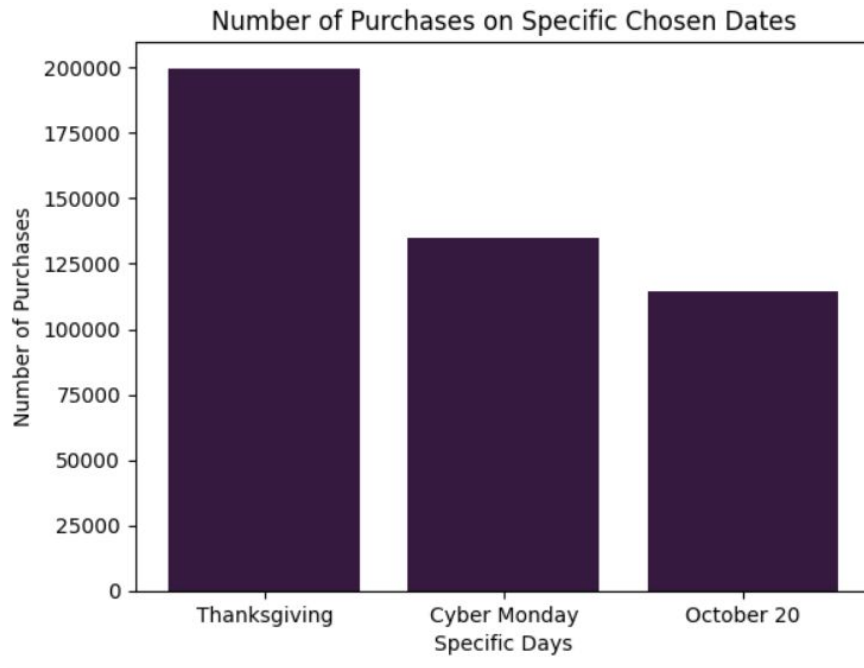
user_session

2f5b5546-b8cb-9ee7-7ecd-
84276f8ef486



```
RangeIndex: 20692840 entries, 0 to 20692839
Data columns (total 13 columns):
#   Column      Dtype
---  ---
0   event_time   datetime64[ns]
1   event_type   object
2   product_id   int64
3   category_id  int64
4   brand        object
5   price        float64
6   user_id      int64
7   month        int32
8   hour         int32
9   date_column  object
10  day_of_week  object
11  category     object
12  product      object
dtypes: datetime64[ns](1), float64(1), int32(2), int64(3), object(6)
memory usage: 1.9+ GB
```

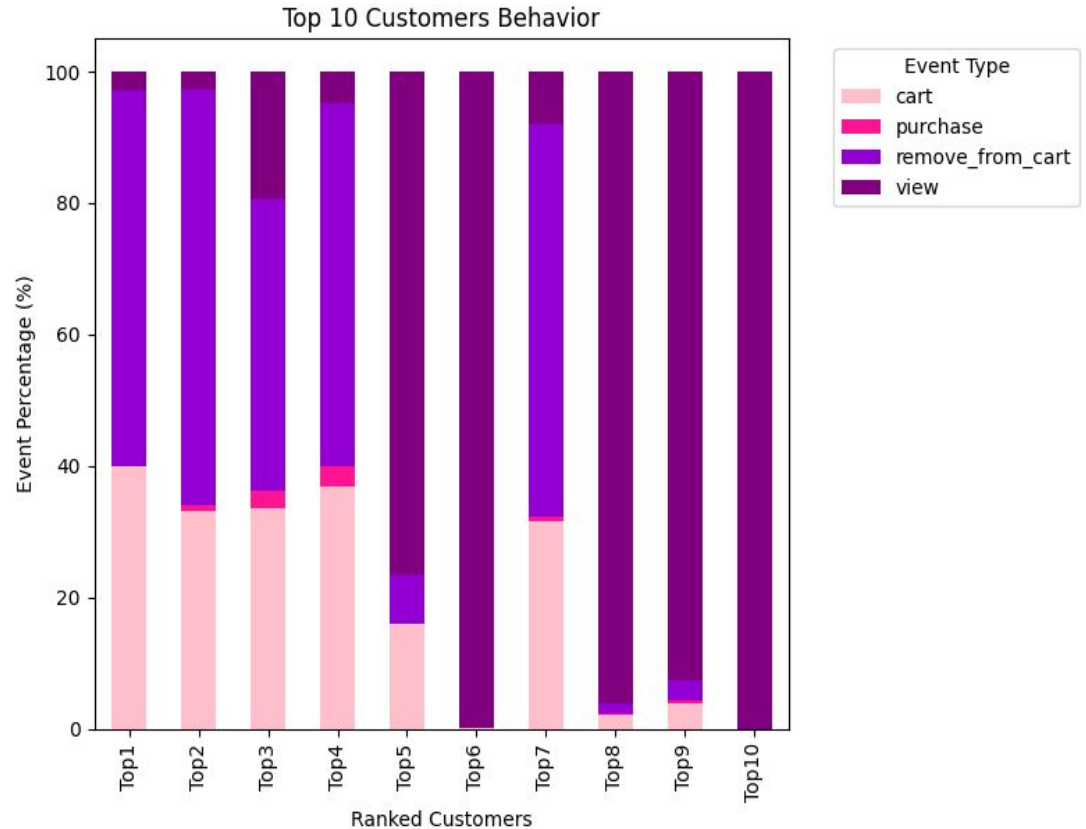
Website Traffic



- Thanksgiving initiates the peak holiday period.
- Cyber Monday's transaction are surpassed by Thanksgiving.
- October 20's day has declined, signaling an early holiday shopping trend.

Customer Behavior Analysis

- Customer Behaviour Pattern
- Customer Event Trends
- Customer's favorite brands
- Customer event trends towards the favorite brand
- Pricing Strategy Analysis based on customer purchase



Product & Brand Performance



- Products Distribution by Event Type
- Average Price for Top 3 & Bottom 3 Purchased Products
- Average Price for Top 3 & Bottom 3 Purchased Brands

Recommendations

Optimize Product Presentation:

- Detailed product listings, social proof techniques

Engage Browsing Users:

- Quizzes and virtual try-ons, wish lists

Enhance User Experience:

- Improved website interface, targeted marketing and discounts

Address Quality Issues:

- Product quality evaluation, surveys

Leverage Brand Reputation:

- Exclusive offers, co-branded limited-edition products

Adapt to Feedback:

- Monitoring and adapting