

June 2020

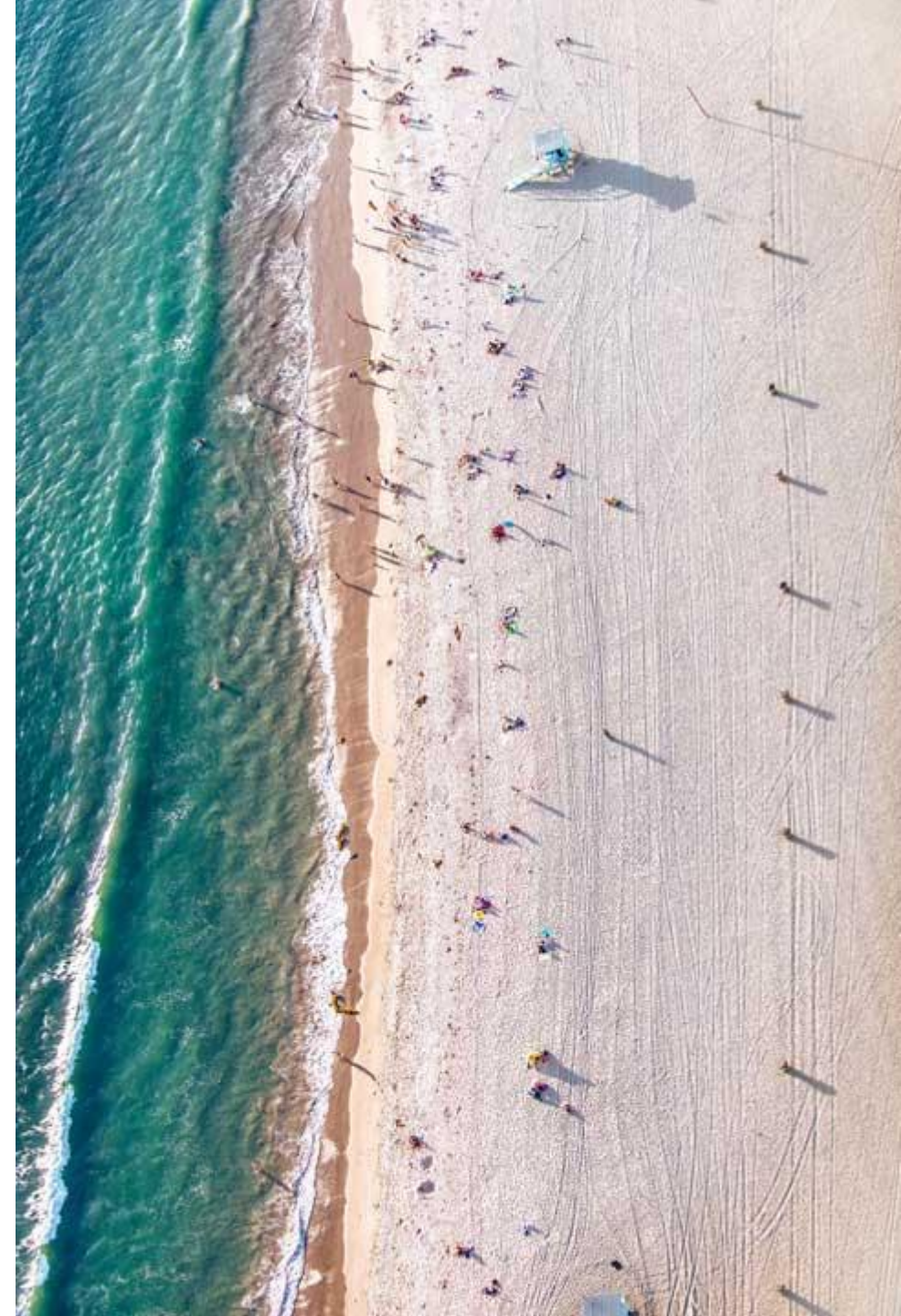
# Category review: Chips

Retail Analytics and Strategy

Presented by Patricia O'Maroro



Classification: Confidential



# Our 17 year history assures best practice in privacy, security and the ethical use of data

We all have a responsibility to use data for good

## Privacy

- We have built our business based on privacy by design principles for the past 17 years
- Quantum has strict protocols around the receipt and storage of personal information
- All information is de-identified using an irreversible tokenisation process with no ability to re-identify individuals.

## Security

- We are ISO27001 certified - internationally recognised for our ability to uphold best practice standards across information security
- We use 'bank grade' security to store and process our data
- Comply with 200+ security requirements from NAB, Woolworths and other data partners
- All partner data is held in separate restricted environments
- All access to partner data is limited to essential staff only
- Security environment and processes regularly audited by our data partners.

## Ethical use of data

Applies to all facets of our work, from the initiatives we take on, the information we use and how our solutions impact individuals, organisations and society.

Quantum believes in using data for progress, with great care and responsibility. As such please respect the commercial in confidence nature of this document.

# Executive summary

01

Data Preprocessing,  
Data insights,  
Consumer and  
Purchase behavior  
trends

1. Average sales a day, month and quarter
2. Sales by stores, Products and Brand
3. Sales by Customer life-stage
4. Sales by customer segment (Premium)
5. Average sales by life-stage
6. Average product quantity by life-stage
7. Distribution of number of transactions by customers

02

Identifying benchmark  
stores that allow us to  
test the impact of the  
trial store layouts on  
customer sales.

1. Method used to select control group
2. Metrics used to determine significant difference in sales between trial and control stores

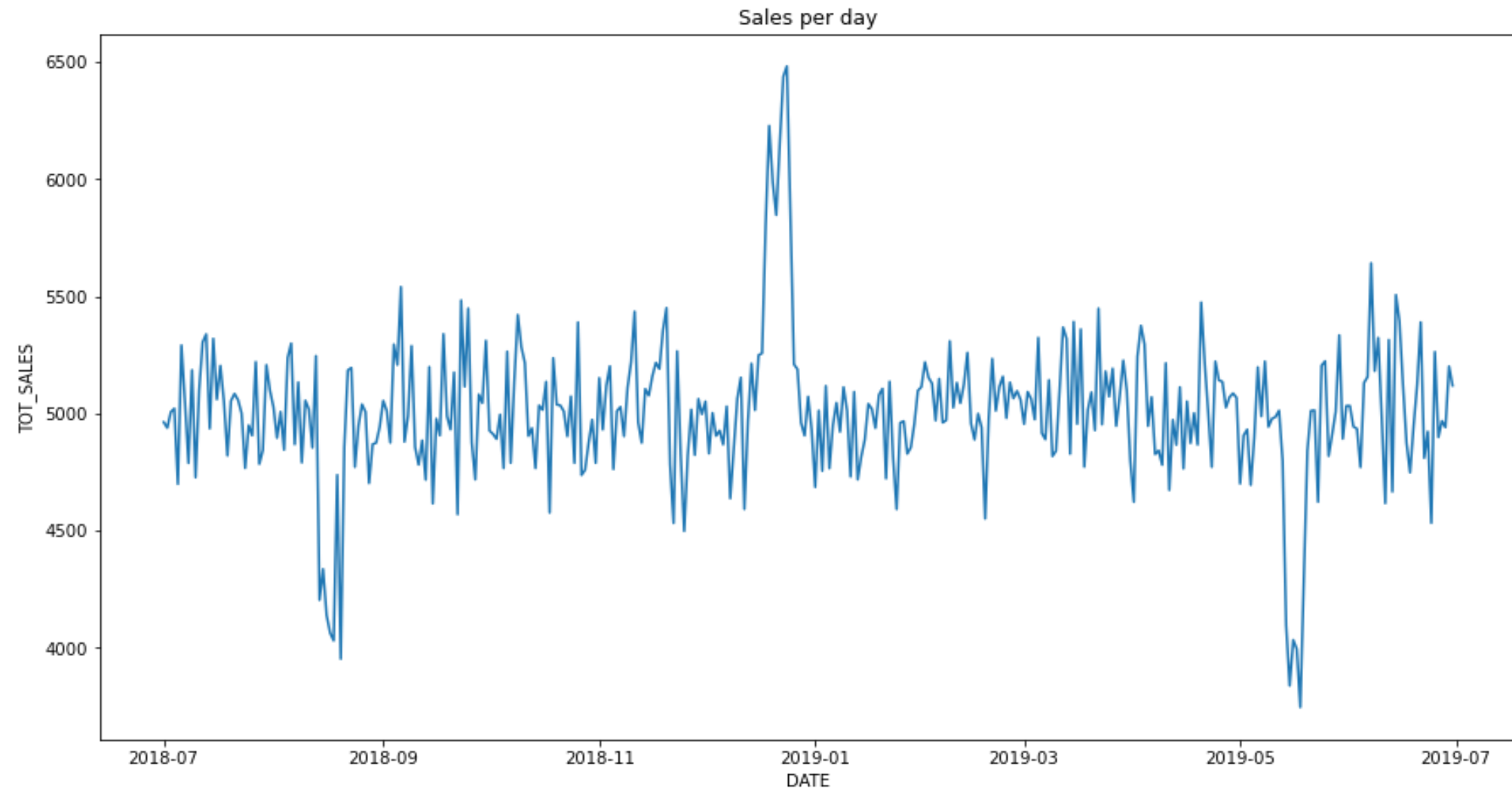
# TASK 1

**Category: Data Preprocessing, Data insights, Consumer and Purchase behavior trends**

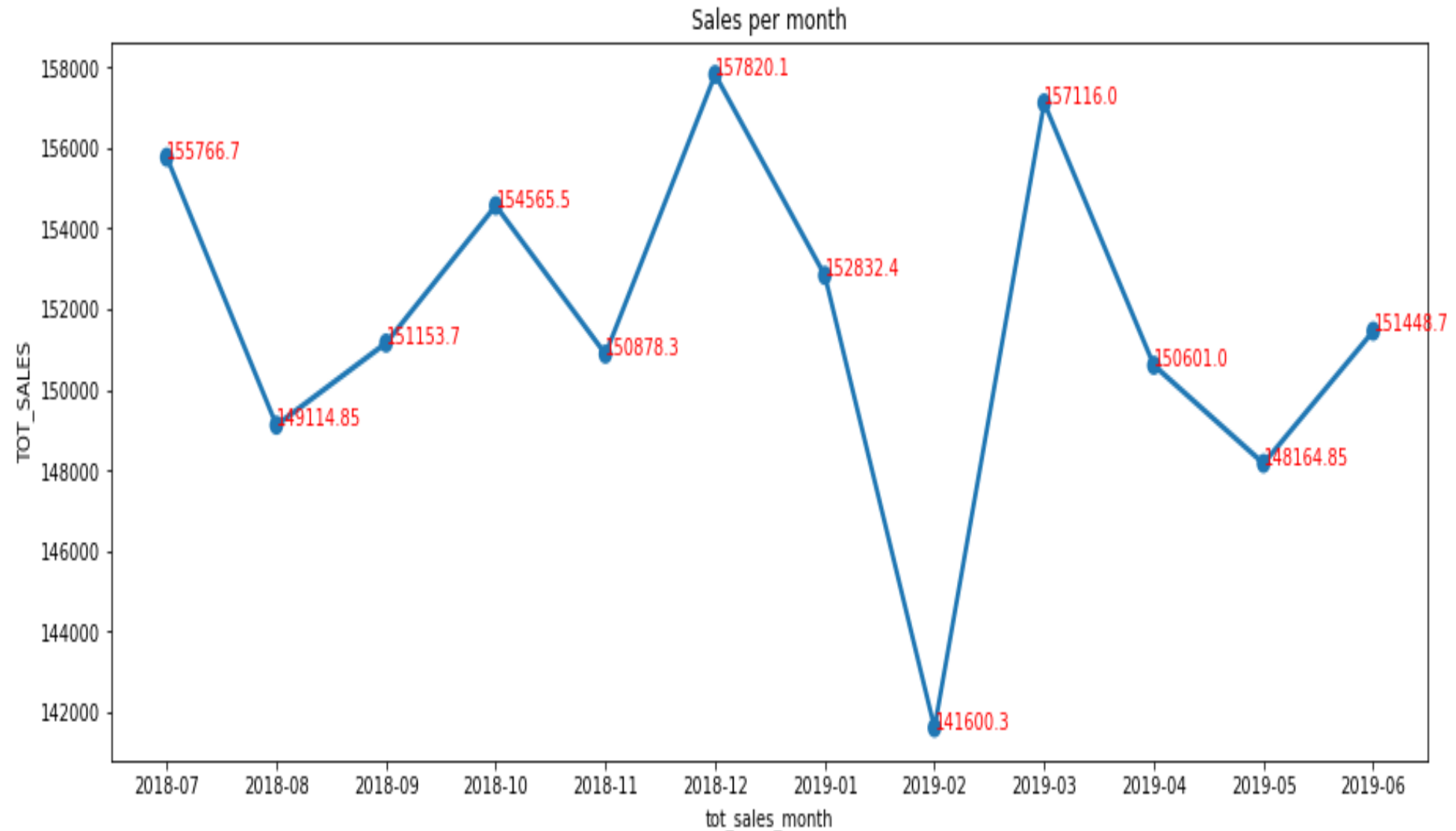
## Overview: Key takeaways on total sales by period, store, product, brand, and customer segments

1. Highest daily sales were recorded in the days preceding December 25th (More than \$ 6,000)
2. Highest monthly sales were recorded in the months of December (\$15,720)
3. Highest sales were recorded in Q4 of 2018 (\$ 463,263.90)
4. Store 226 has registered the highest sales above all other stores with \$17,844.65 and store 76 registering the lowest at \$6
5. Highest selling product is the Dorito Corn Chip Supreme 380g at \$40,352 while WW Crinkle Cut Original 175g is the lowest selling product at \$4,532.
6. Highest selling brand is Kettle at \$ 390,239 (21.43% of all sales) while the French fries are the lowest selling at \$7,929 (less than 1%)
7. Highest sales are recorded by Older singles/couples at \$378,871(20.8% of all sales) and New families are the least at \$47,655.75 (2.62%)
8. Highest sales recorded by Mainstream customers at \$706,242.50 (38.78%)
9. Most customers have only done around 3 transactions in total.

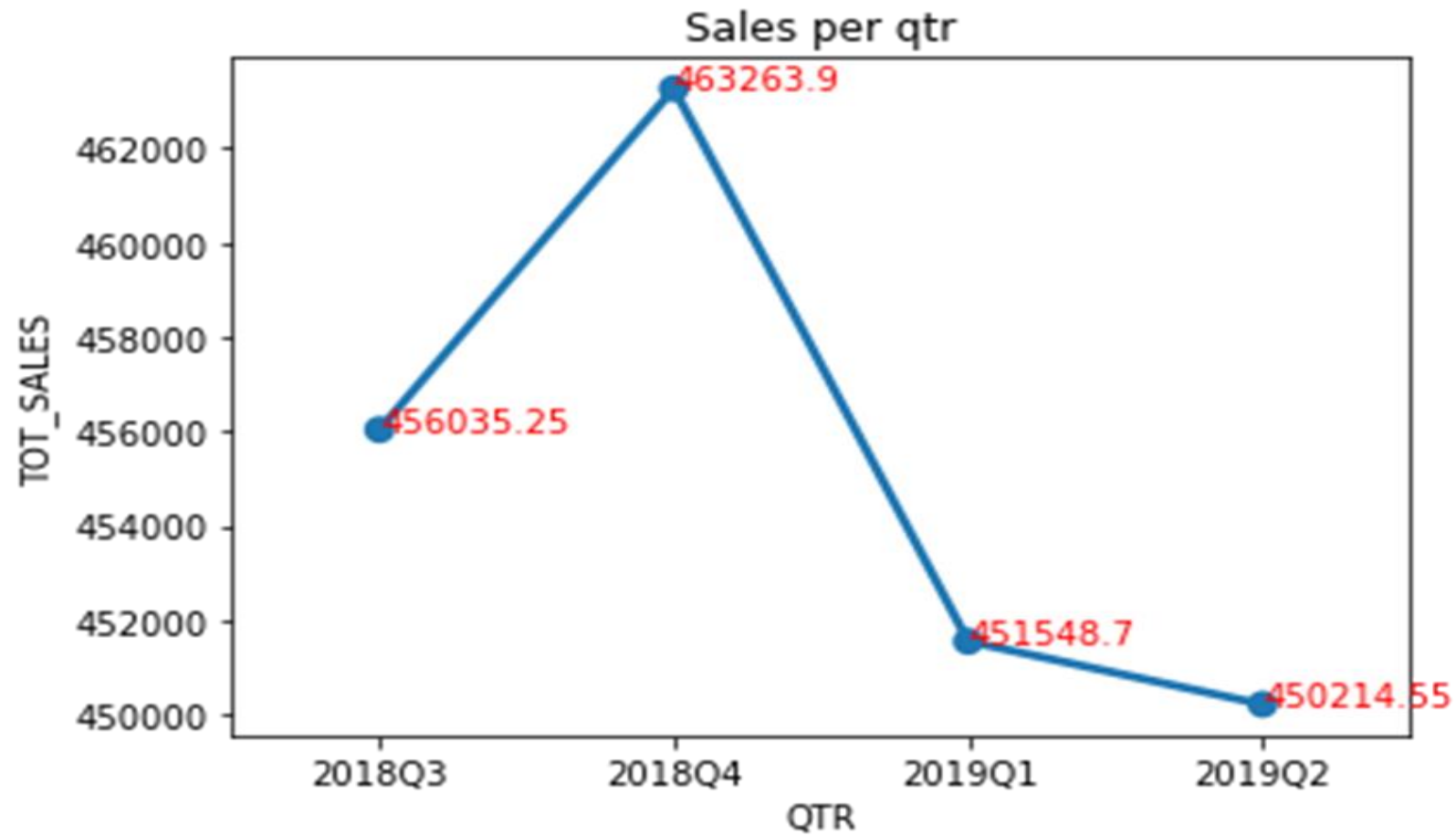
# Total sales by Day



# Total sales by month

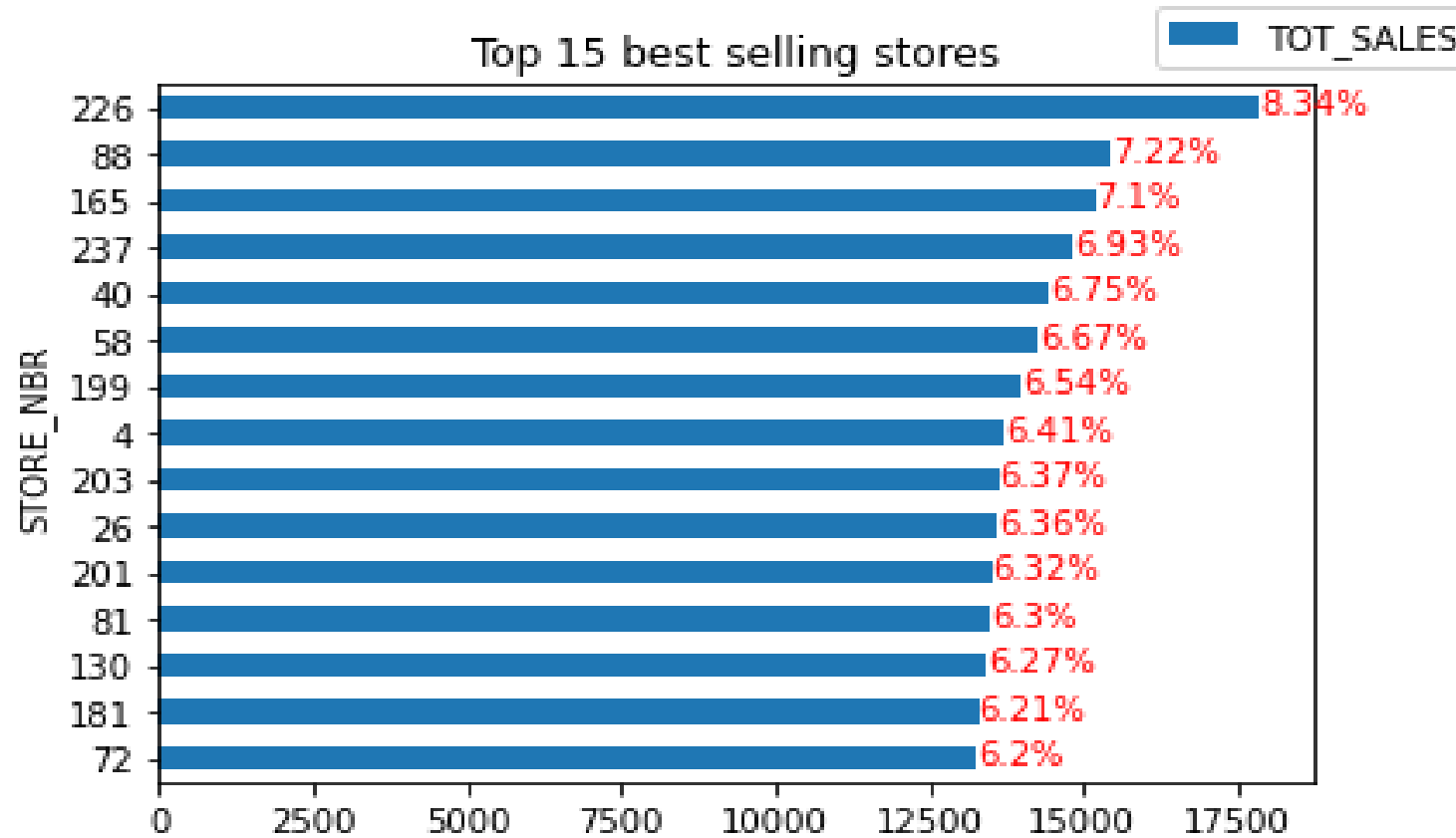


## Total sales by Quarter

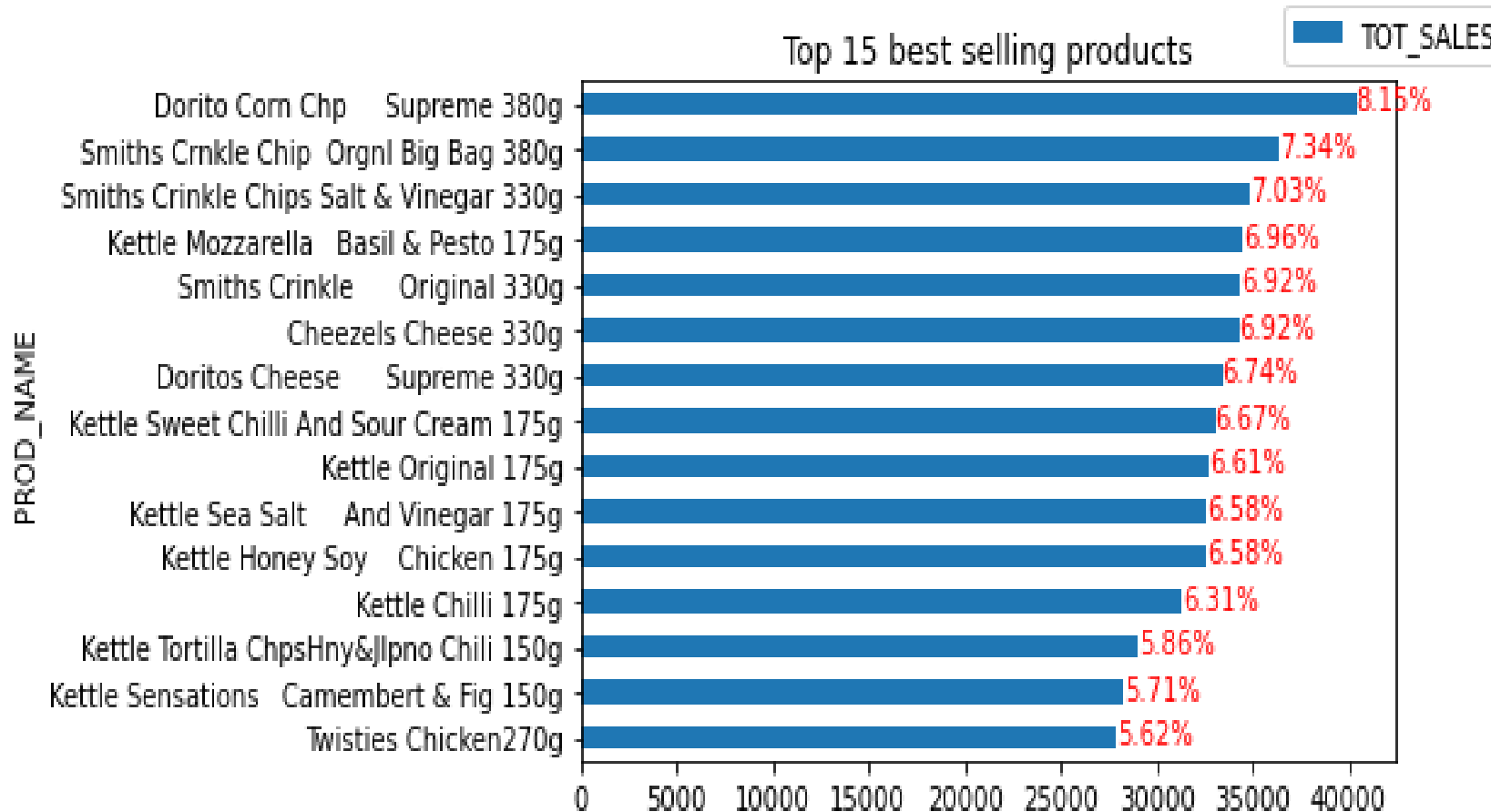




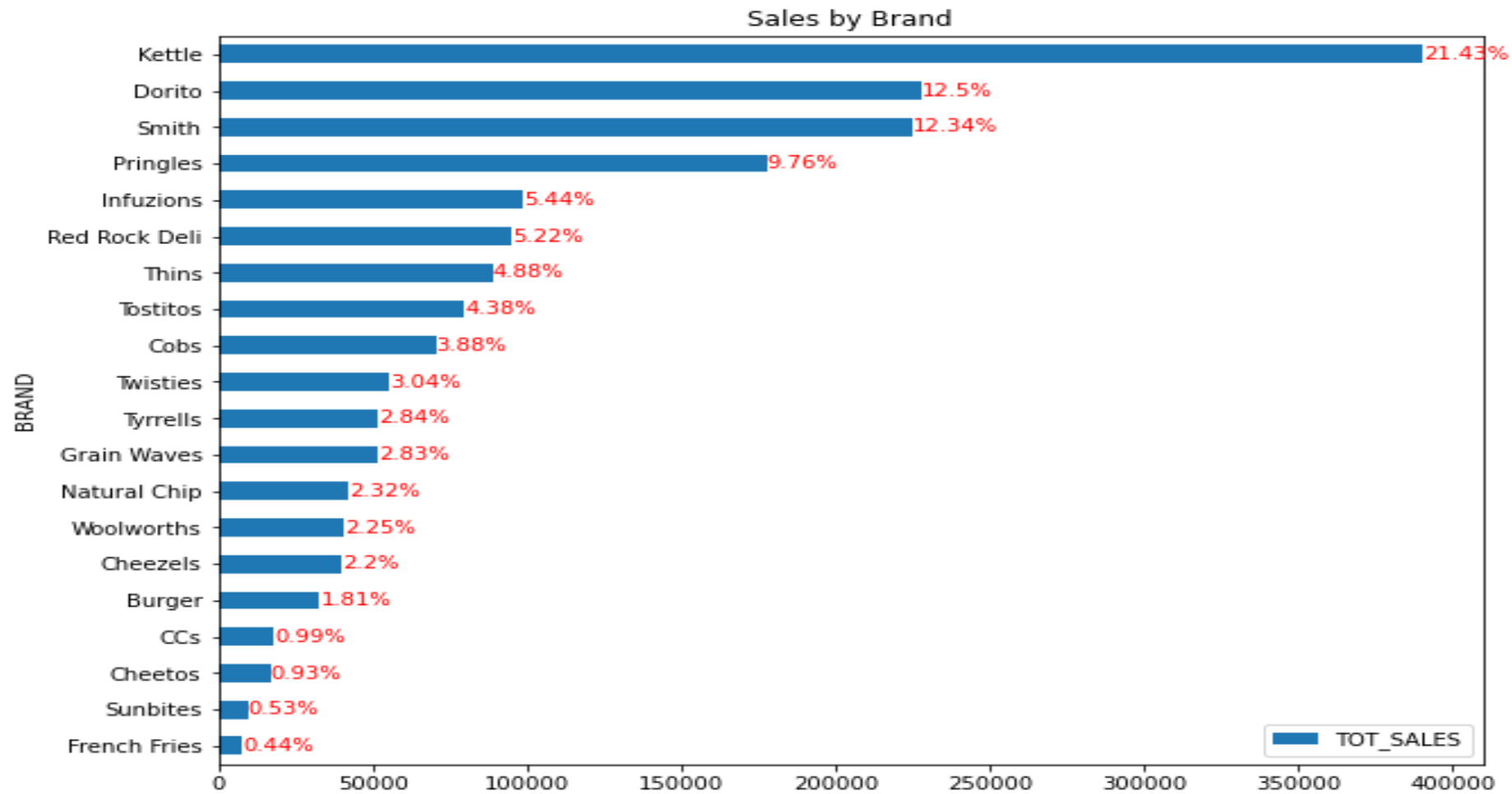
## Top 15 highest selling stores



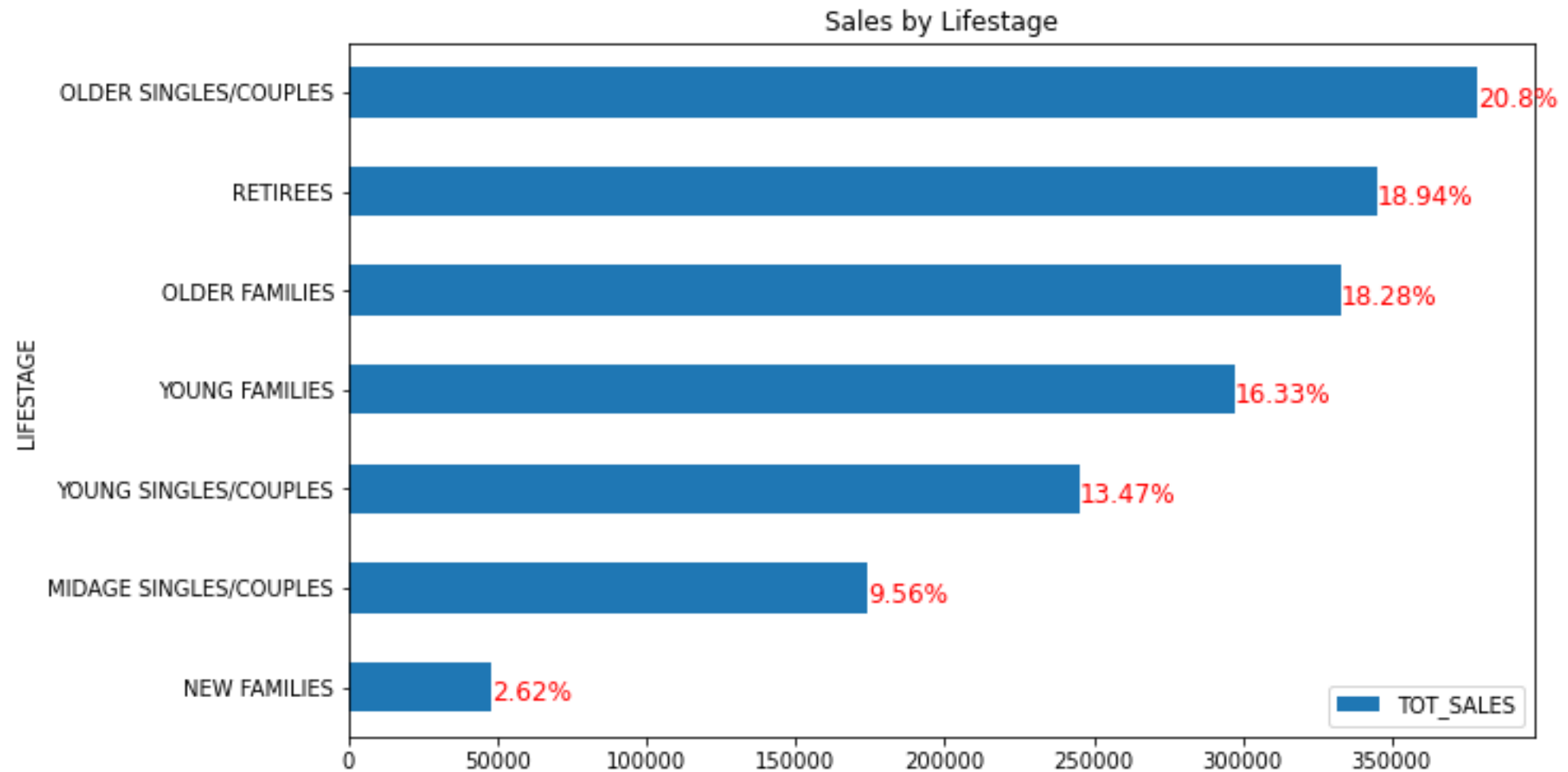
# Top 15 highest selling product



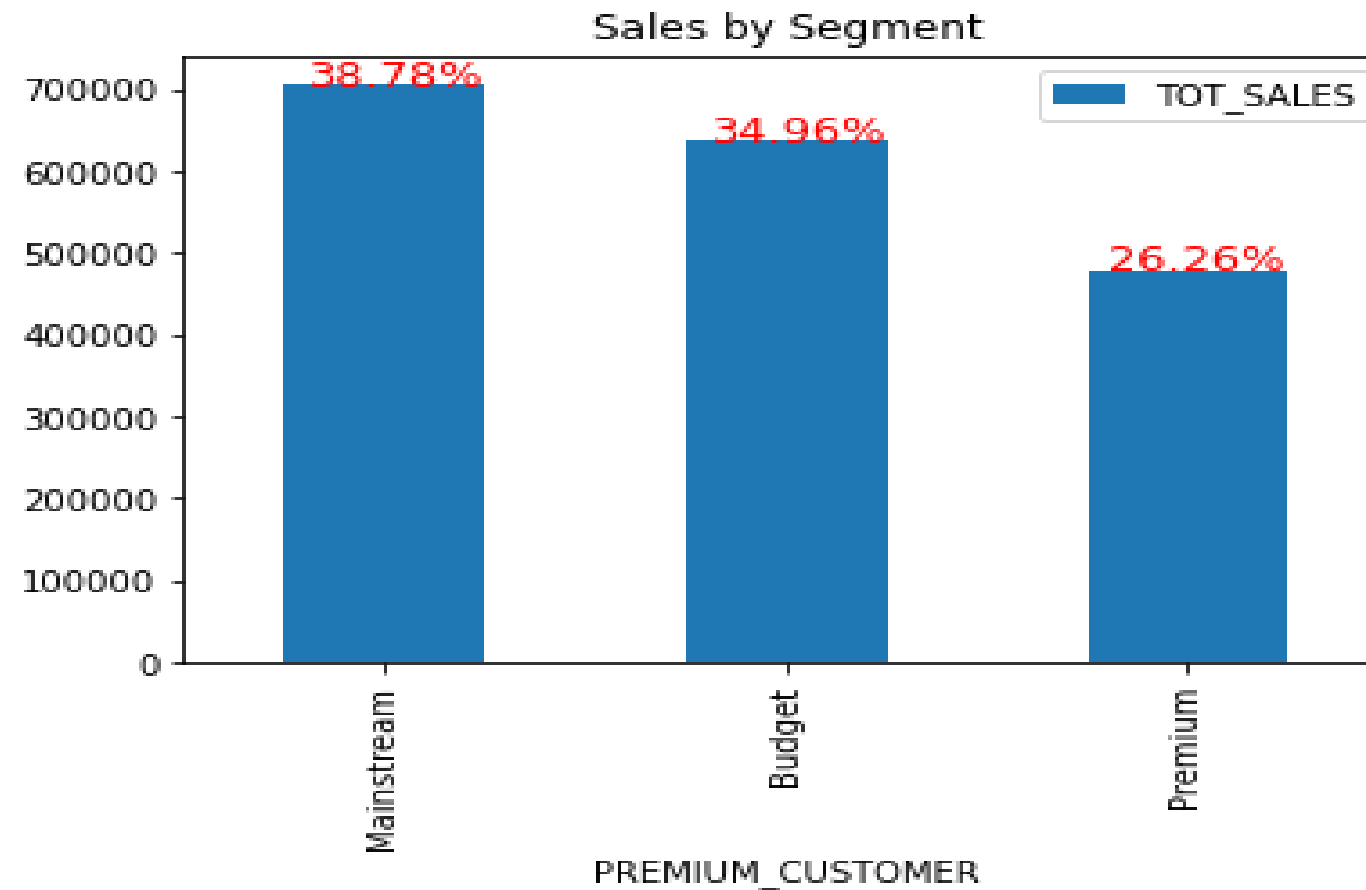
# Sales by Brand



# Sales by Customer Life-stage



## Sales by segment (Premium and others)



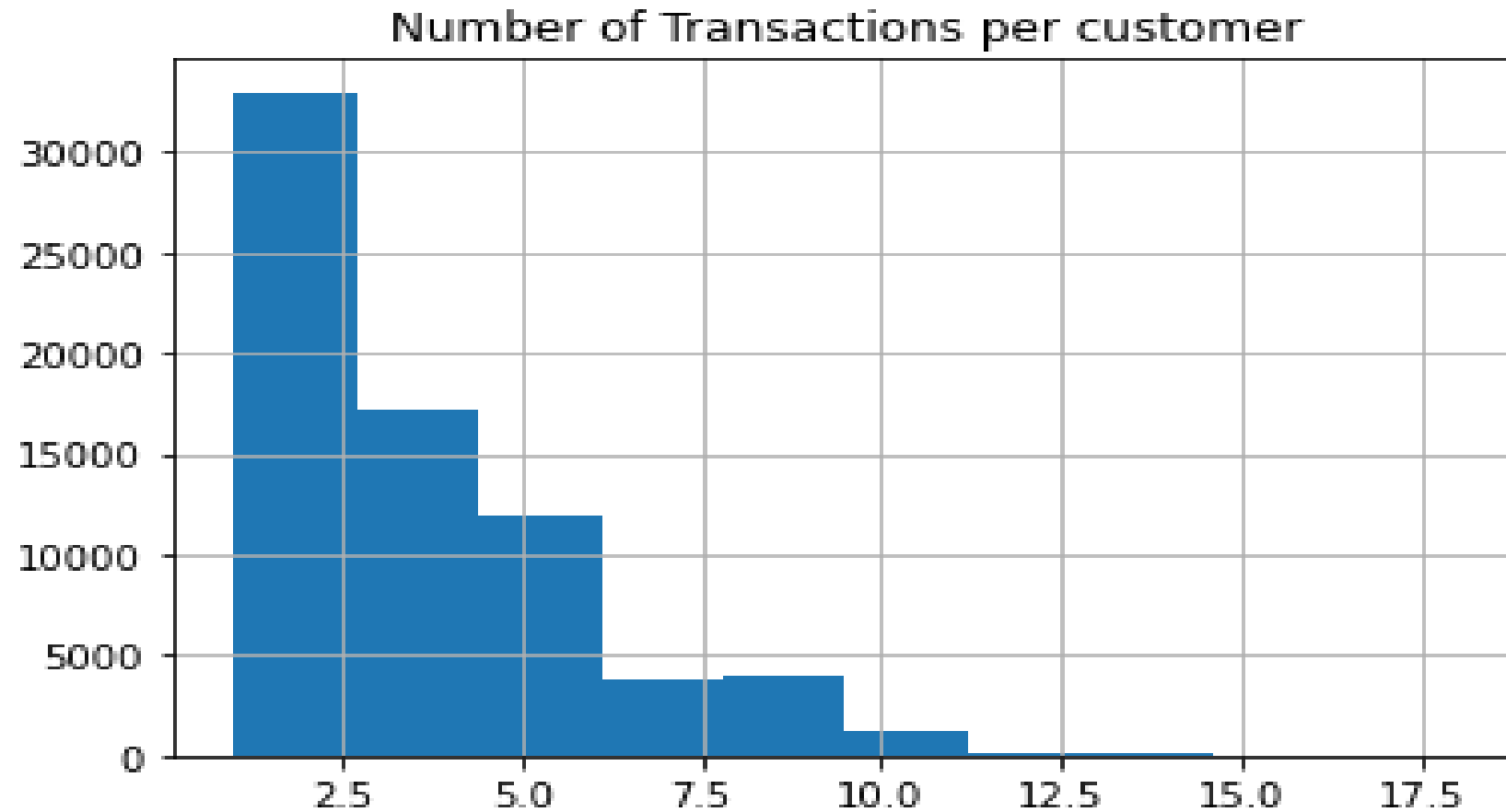
## Average amount spent by customers in each life-stage

	TOT_SALES	count	mean
3	OLDER SINGLES/COUPLES	51361	7.376647
4	RETIREEES	46934	7.348338
0	MIDAGE SINGLES/COUPLES	23700	7.342215
2	OLDER FAMILIES	45767	7.274757
1	NEW FAMILIES	6562	7.262382
5	YOUNG FAMILIES	41033	7.247484
6	YOUNG SINGLES/COUPLES	34309	7.149946

Average number of products purchased by customers in each life-stage

	PROD_QTY	count	mean
2	OLDER FAMILIES	45767	1.955011
5	YOUNG FAMILIES	41033	1.940341
3	OLDER SINGLES/COUPLES	51361	1.913164
0	MIDAGE SINGLES/COUPLES	23700	1.901181
4	RETIREEES	46934	1.892423
1	NEW FAMILIES	6562	1.857056
6	YOUNG SINGLES/COUPLES	34309	1.832901

# Distribution of number of transactions by customers





# TASK 2

**Trial store performance: Identifying benchmark stores that allow us to test the impact of the trial store layouts on customer sales.**

## Explanation of the control store vs trial stores

- Method used to select control group
  - ✓ Control group was selected based on those stores whose sales were closer to the mean.
  - ✓ We selected stores number 148, 56, 212 as our control groups with their sales closest to the mean
- Metrics used to determine significant difference in sales between trial and control stores
  - ✓ Total sales over the pre-trial period
  - ✓ Total number of customers over the pre-trial period

# Possible candidates for Control group

Possible Control stores

	STORE_NBR	TOT_CS	TOT_SALES	MAG_SALES	
0	148	883	5757.600000	799.527885	
1	56	823	5662.500000	704.427885	
2	212	811	5634.400000	676.327885	
3	246	458	4058.400000	-899.672115	-
4	202	452	3982.900000	-975.172115	-

# Control group vs Trial group metrics

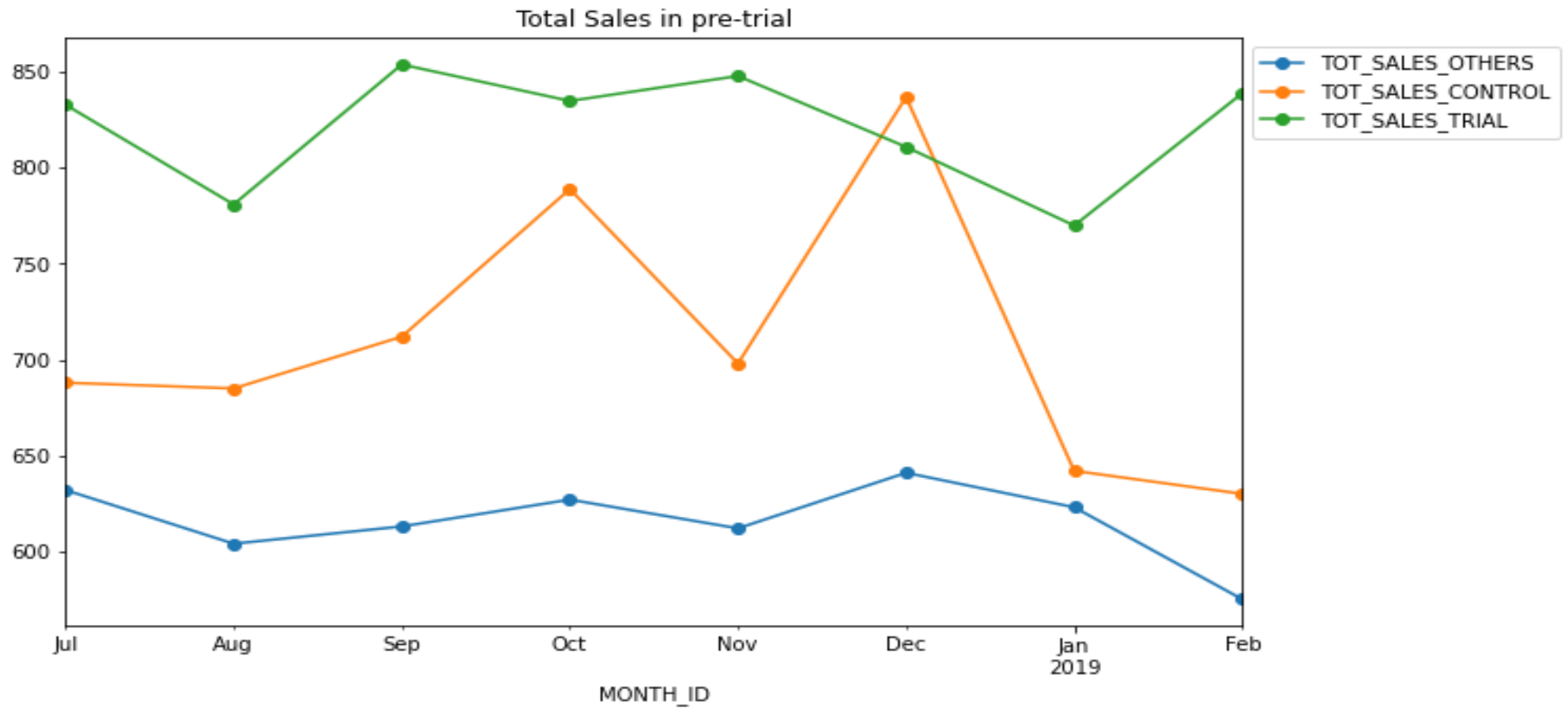
Total sales and Total customers in Control group

MONTH_ID	TOT_CS_CONTROL	TOT_SALES_CONTROL
2018-07	103	688
2018-08	104	685
2018-09	104	712
2018-10	115	789
2018-11	104	698
2018-12	122	837
2019-01	96	642
2019-02	89	630

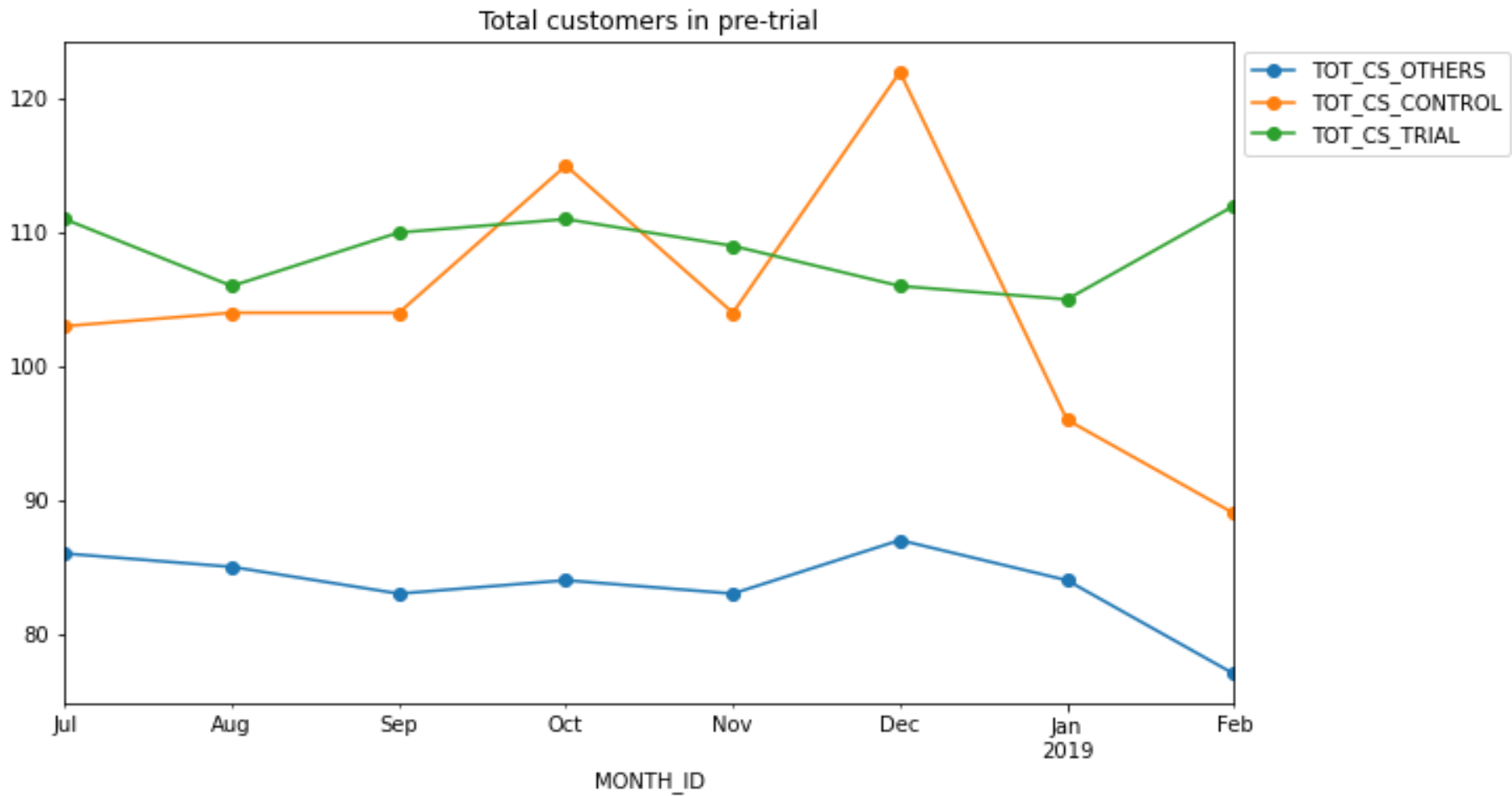
Total sales and Total customers in Trial group

MONTH_ID	TOT_CS_TRIAL	TOT_SALES_TRIAL
2018-07	111	833
2018-08	106	781
2018-09	110	854
2018-10	111	835
2018-11	109	848
2018-12	106	811
2019-01	105	770
2019-02	112	839

# Total Sales in Control, Trial and Other stores during the pre-trial period



# Total customers in Control, Trial and Other stores during the pre-trial period



## Assessing the impact of sales in trial stores during the pre-trial period

- In determining if there's a statistical significance in TOTAL SALES of the control and trial groups, result yielded that there is none
- In determining if there's a statistical significance in TOTAL CUSTOMERS of the control and trial groups, result yielded that there is none.

## Assessing the between trial and pretrial sales in trial and control stores

- No statistical significance between sales in pretrial and post trial periods in the trial stores
- There is statistical significance between sales in pre trial and post trial period in control stores
- In both the trial and control stores, average sales are generally higher in the post trial period
- Sales are generally higher in the trial stores than in control stores.



## Conclusions and recommendations

- Sales are highest during the days preceding major holidays like Christmas and New Years
- Average store sales are \$6,719
- Qtrs 3 & 4 of 2018 yielded higher sales than Qtrs 1 & 2 of 2019
- While the Trial group has a higher mean than Control group, the impact of the Trial group in sales during the pre-trial period is not significant
- Sales are generally higher in post trial period in both trial and control stores
- Measures applied in trial stores were successful in increasing overall sales and should therefore be applied in other outlets



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