Udacity
Marketing Analytics

Nanodegree Program
Project: Craft a Report

Objective Results

The Objectives are listed below, your job is to asses the data and report on the performance against the objectives:

- Increase total sales by 30% on Black Friday 2018 vs. Black Friday 2017.
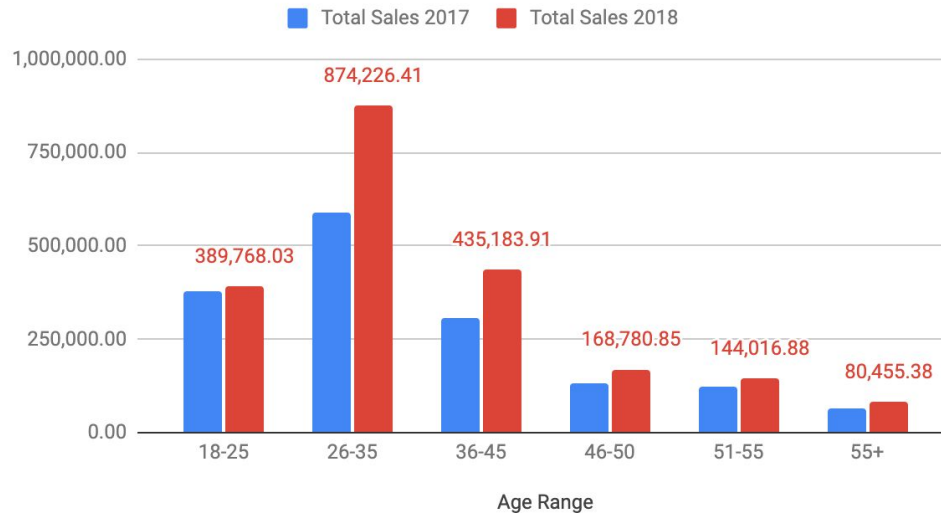- Decrease total ad spend by 30% from Black Friday 2017 to Black Friday 2018.

From the table below, we know that **Sales goal was met, but the Cost was not.**

	Total Sales	Total Cost
2017	1,594,913.8	607,610.4
2018	2,092,431.5	837,155.6
Change %	31.2%	37.8%

Evaluate the Audience

Question: Demonstrate Sales by Age-Range

Total Sales by Age-Range

■ Total Sales 2017 ■ Total Sales 2018

1,000,000.00	
874,226.41	
750,000.00	
500,000.00	435,183.91
389,768.03	
250,000.00	168,780.85
	144,016.88
0.00	80,455.38

18-25 26-35 36-45 46-50 51-55 55+

Age Range

- Age range of 26-35 generated the most sales both in 2017 and 2018.
- Age range of 55+ generated the least sales in 2018 and 2018.

Evaluate the Audience

Question: Demonstrate Sales by Gender

Gender 2017	Total Sale Amount	Average Order Amount
F	357,328.11	86.77
M	1,237,585.74	93.81
Grand Total	**1,594,913.85**	**92.13**

Gender 2018	Total Sale Amount	Average Order Amount
F	503,026.64	88.61
M	1,589,404.82	95.09
Grand Total	**2,092,431.46**	**93.45**

- From the comparisons of Total sales and Average order amount, we can see that Men spent much more than Women in both 2017 and 2018.
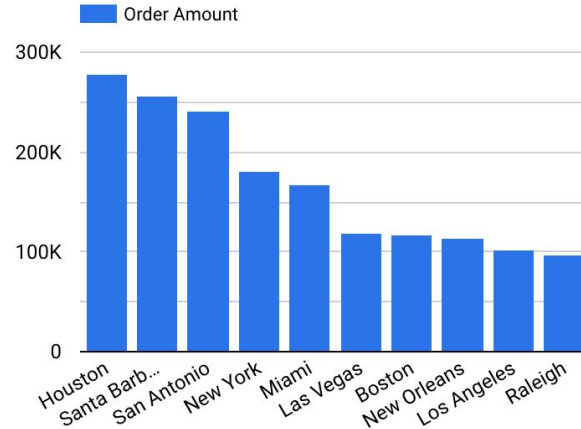
Evaluate the Audience

Question: Demonstrate Sales by City

Huston generated the most sales in both 2017 and 2018.
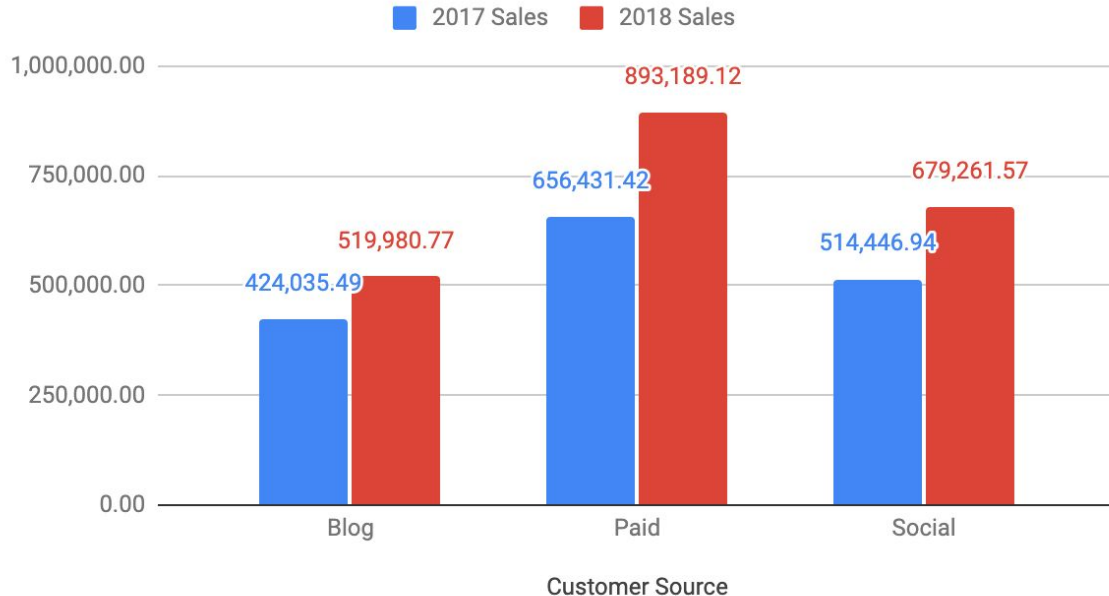

Sales by City 2017
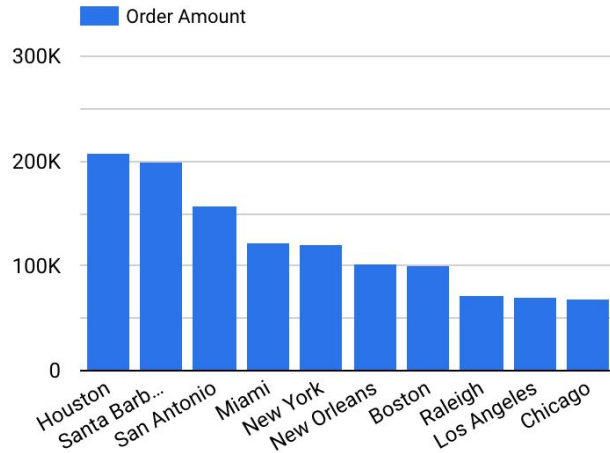
Sales by City 2018

Evaluate the Marketing

Sales by Channels:

| Customer Source - Paid	Total Sales	Total Cost	ROI
2017	656,431.4	607,610.4	8.0%
2018	893,189.1	837,155.6	6.7%

2017 Sales and 2018 Sales

- ROI in 2017 and 2018 are 8.0% and 6.7%, respectively, both positive.
- We can see that in 2018, all channel sales increased comparing to in 2017. Paid channel has the most sales among three customer sources in 2017 and 2018.

Evaluate the Marketing

Average CPA by Age Group:
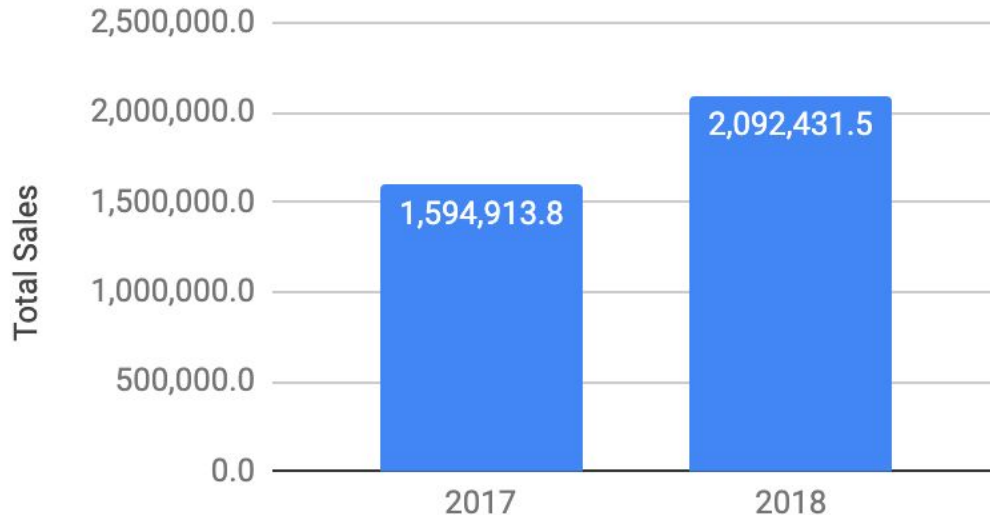
Average of CPA for Different Age
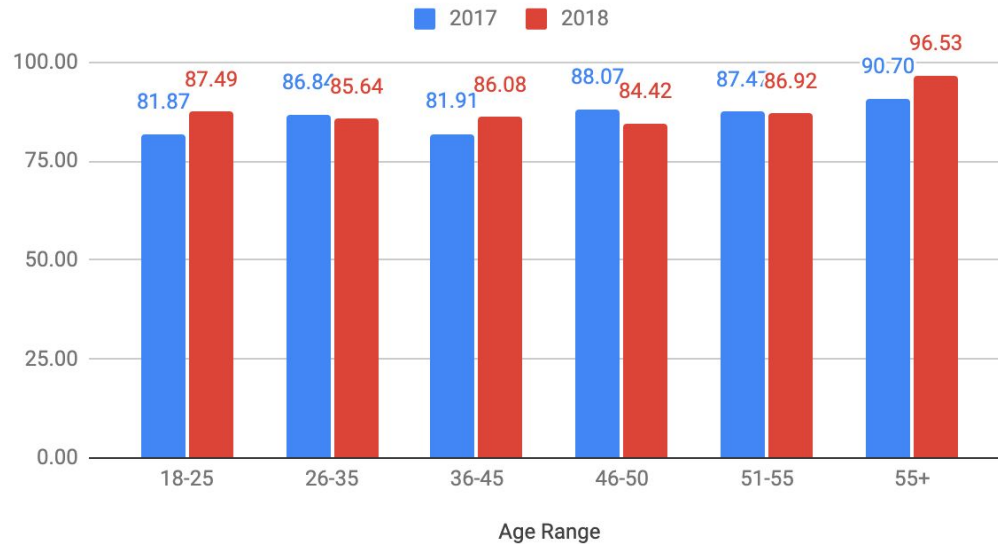
- Age 26-35 group has the best CPA. The average CPA for Age 26-35 in 2017 and 2018 was 86.8 and 85.6 respectively, lower than others. Also from previous chart, we can see age 26-35 group generate most sales.

Evaluate the Sales

Question 1: Total revenue generated in 2017 and 2018

Total Sales

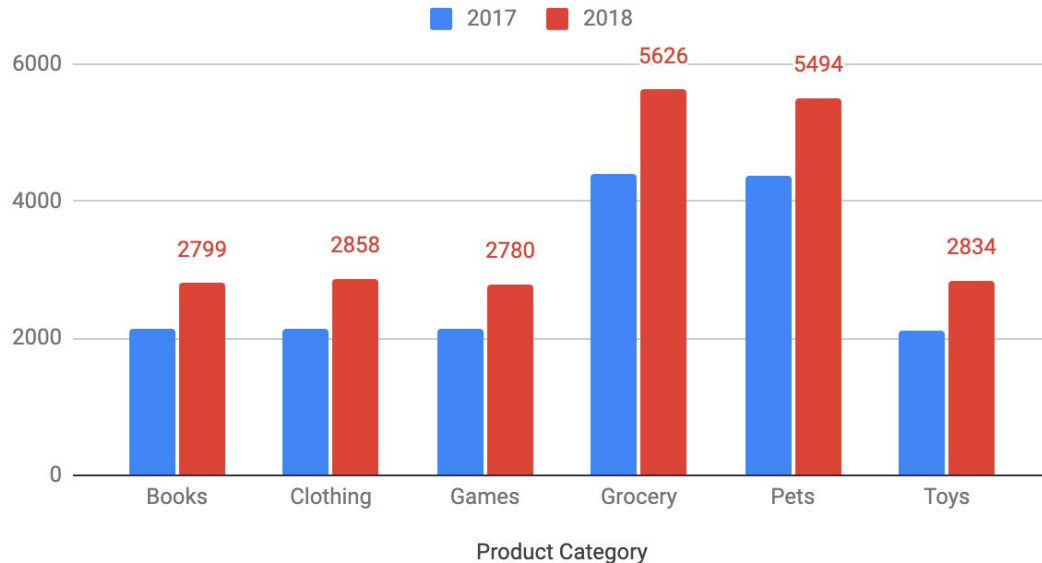Question 2: What was our average order amount in 2017 vs 2018?

	Avg of Order Amount
2017	92.13
2018	93.45

- In 2017, Average order amount is $92.1.
- in 2018, Average order amount increased to $93.5.

Evaluate the Product Categories

Question: Which product category was most popular in 2017 & 2018

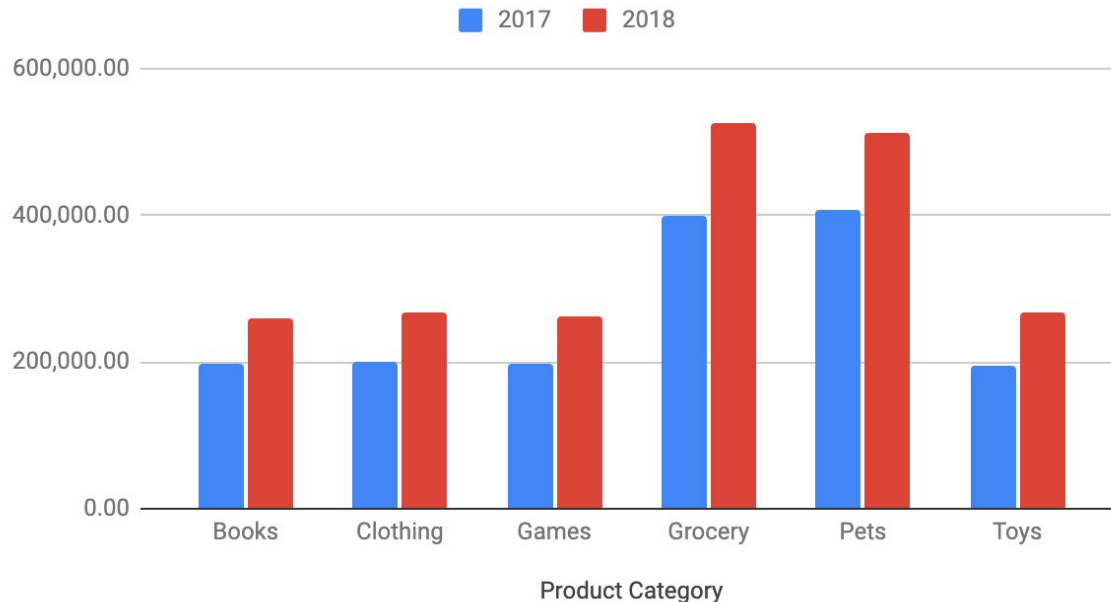## Count of Orders by Product Category

- Grocery was the most popular product in 2017 and 2018, the number of orders for Grocery was 4400 and 5626 in 2017 and 2018, respectively.

Evaluate the Product Categories

Question: Total Sales by Product Category

2017 Sales and 2018 Sales by Product Category

- In 2017, Pets generated the most sales, slightly more than the sales of Grocery.
- Grocery generated the most sales in 2018, followed by Pets.