

Udacity

Marketing Analytics

Nanodegree Program
Project: Craft a Report

Objective Results

The Objectives are:

- Increase total sales by 30% on Black Friday 2018 vs. Black Friday 2017:

Increase in Sales rate = $(\$2,092,431 / \$1,594,914 - 1) \times 100\% = 31.19\%$

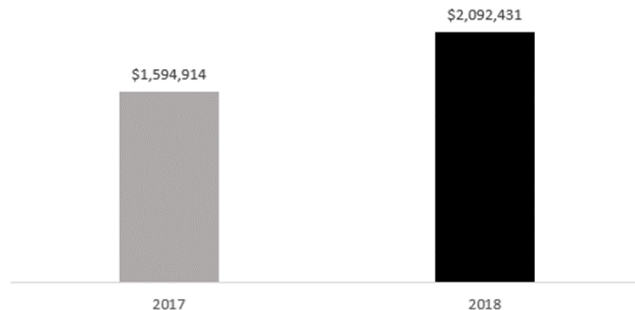
We have achieved this objective with a 31.19% increase in Sales.

- Decrease total ad spend by 30% from Black Friday 2017 to Black Friday 2018:

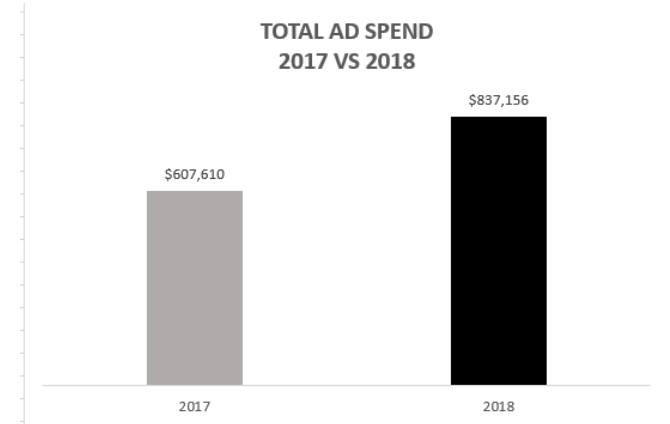
Increase in Ad Spend = $(\$837,156 / \$607,610 - 1) \times 100\% = 37.78\%$

The Ad Spend increased by 37.78%, so we did not achieve this objective.

**TOTAL REVENUE
2017 VS 2018**



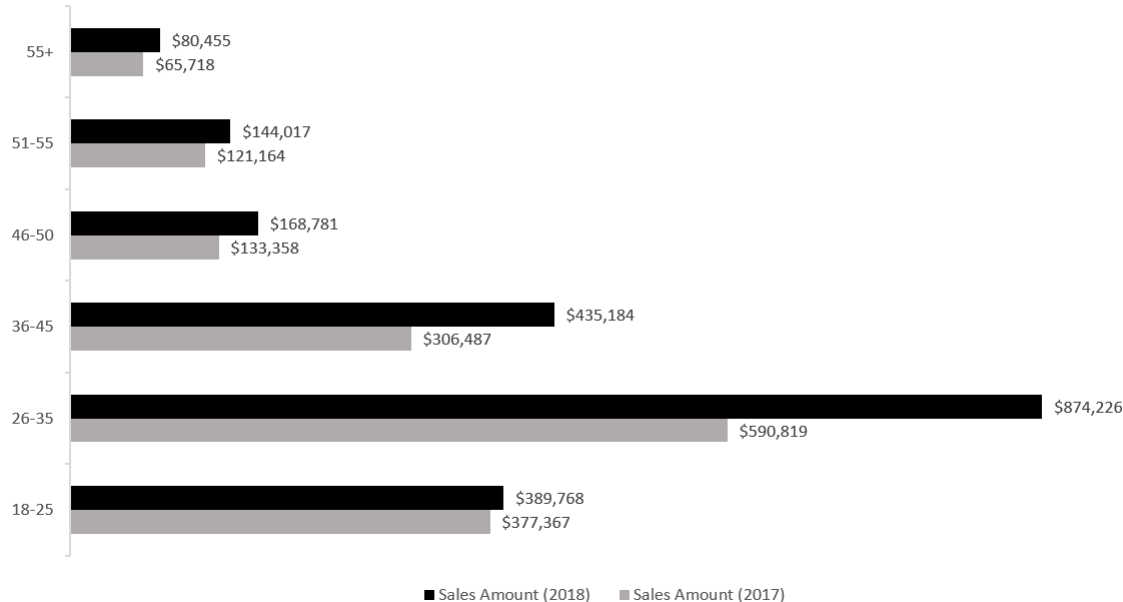
**TOTAL AD SPEND
2017 VS 2018**



Evaluate the Audience

Question: Demonstrate sales amount by age-range

**COMPARISON OF SALES BY AGE GROUP
2017 VS 2018**



2018 experienced an increase in sales for all age ranges.

The 26-35 age group remained the top buying group in both 2017 and 2018, with sales jumping from \$590,819 to \$874,226.

Likewise, the 46-50, 51-55 and 55+ age range stayed in the bottom 3 between 2 years.

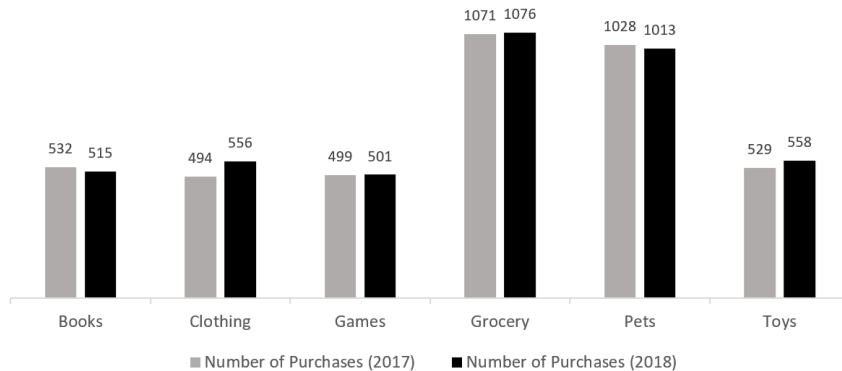
However, there was a switch in positions for the 18-25 and the 36-45 age group: in 2018, the latter surpassed the former in purchasing amount to become the group with the second highest purchase.

Evaluate the Audience

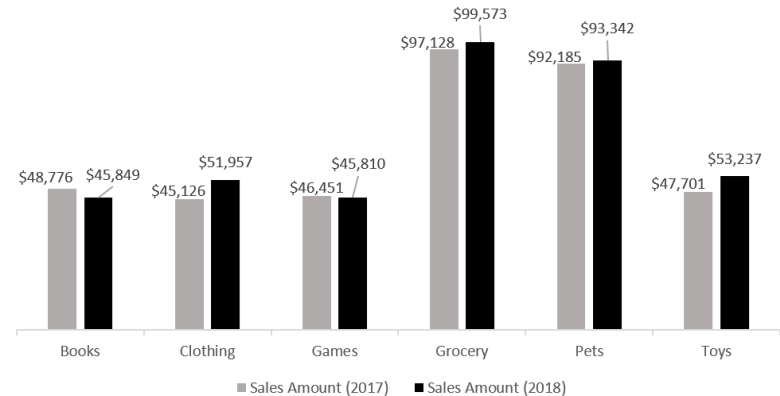
Question: Which product category was least popular to 18-25 year old?

Considering purchase quantity, Clothing was the least popular category in 2017 and Games was the least popular in 2018, both with less than 500 times of purchasing.

**COMPARISON OF PRODUCT CATEGORIES' QUANTITY
2017 VS 2018**



**COMPARISON OF PRODUCT CATEGORIES' SALES
2017 VS 2018**



Similarly, regarding sales, Clothing was the least popular category in 2017 and Games was the least popular in 2018, both with less than \$46,000 in sales amount. Besides, the sales of Books and Toys remained very low compared to the two top categories: Grocery and Pets.

Evaluate the Marketing

Question: Was the ROI on our Paid Channel positive or negative? What was it?

In 2017:

Total Cost of Paid Advertising/CPA Sum = \$607,610

Total Order Amount for Customers from Paid Channel = \$656,431

Return on Investment (ROI) = $(\$656,431 - \$607,610) / \$607,610 \times 100\% = 8.03\%$ is positive

In 2018:

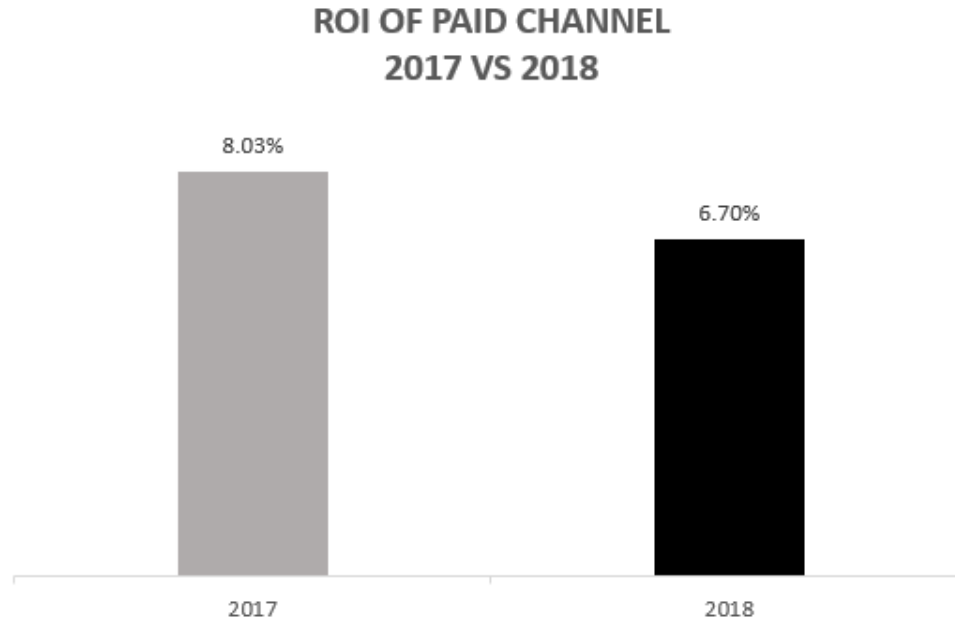
Total Cost of Paid Advertising/CPA Sum = \$837,156

Total Order Amount for Customers from Paid Channel = \$893,189

Return on Investment (ROI) = $(\$893,189 - \$837,156) / \$837,156 \times 100\% = 6.7\%$ is positive

Evaluate the Marketing

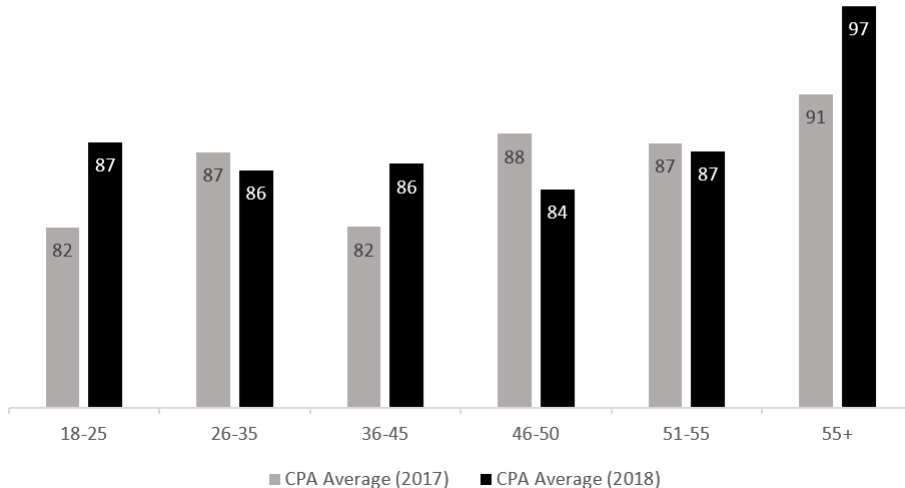
The following bar chart illustrates ROIs in 2017 and 2018. Even though ROIs remained positive, they had the tendency to decrease during the two years.



Evaluate the Marketing

Question: Which age-range had the best CPA?

COMPARISON OF CPA BY AGE GROUP
2017 VS 2018



In 2017, the group with the lowest average CPA (\$82) were the 18-25 and the 36-45 years old.

However, in 2018, the group with the lowest average CPA (\$84) was the 46-50 years old.

The 55+ years old age group remained the group with the highest CPA and the average cost to acquire one person in this group increased by \$6.

Evaluate the Marketing

Question: What was the average CPA in 2017? In 2018?

Average CPA (2017) = \$84.98

Average CPA (2018) = \$86.31

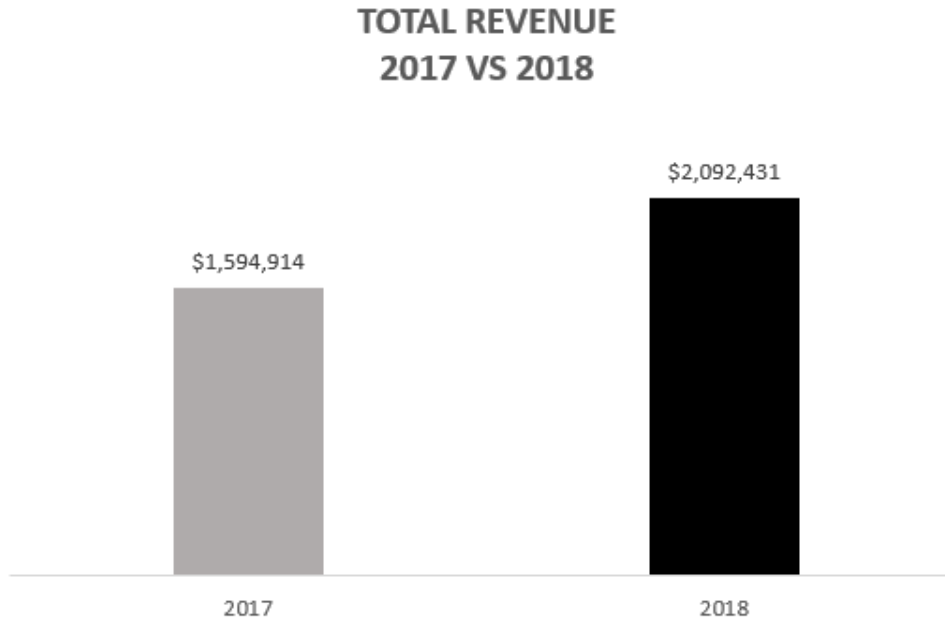


Evaluate the Sales

Question: How much revenue did we generate in 2017? In 2018?

Total revenue (2017) = \$1,594,914

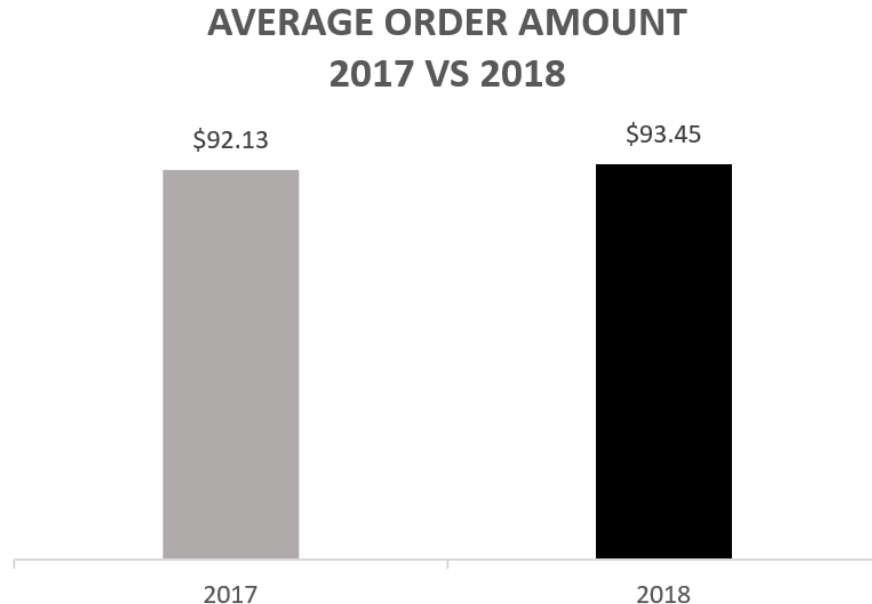
Total revenue (2018) = \$2,092,431



Evaluate the Sales

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

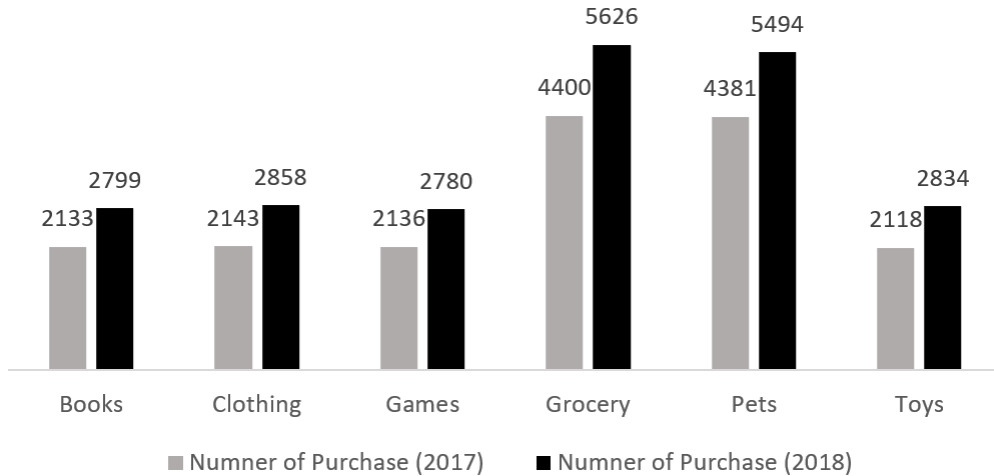
There was only a slight increase in the average order amount, from \$92.13 to \$93.45.



Evaluate the Product Categories

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

**COMPARISON OF PRODUCT CATEGORIES' QUANTITY
2017 VS 2018**

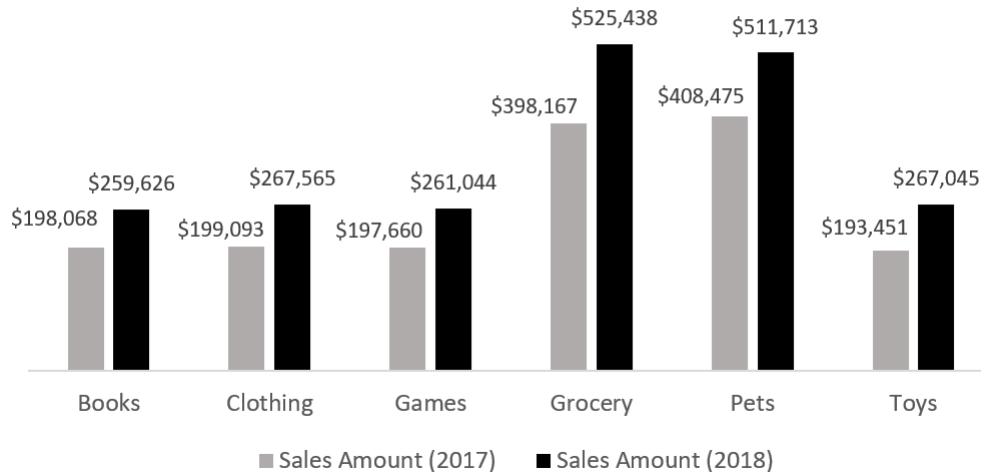


Grocery was the category with the most purchases 2 years in a row with 4,400 times of purchasing in 2017 and 5,626 times of purchasing in 2018.

Evaluate the Product Categories

Question: Demonstrate sales by product category

COMPARISON OF PRODUCT CATEGORIES' SALES



Grocery also ranked the highest in terms of sales in 2018 with \$525,438 in total order amount.

However, in 2017, Pets' sales surpassed Grocery with \$400,000 in total amount.

In 2017, Toys ranked the lowest, but it was replaced by books in 2018.