

Case Study Outline

Executive Summary Overview

The trial campaign for a newly introduced handbag model by TaskaBella was a success. Rocket fuel has gathered some useful market intelligence to boost sales using business analytics. The higher conversion rate and optimistic ROI indicate that the campaign has prospects in the future. Since so many factors influence buying decisions, consumer purchasing behavior changes regularly. As a result, there will always be an information gap between investment and return. To increase consumer purchasing, a smart ad strategy and monitoring are essential.

Current Situation & Concern

TaskaBella, a manufacturer of women's luxury accessories, approached Rocket Fuel, a digital advertising company to conduct a trial campaign for a newly released handbag prototype six months before February 2016. TaskaBella's central purpose was achieving high enough conversion rates such that advertising dollars would result in enough sales to justify the investment.

The trial campaign lasted from November 2015 to February 2016. Approximately 14.5 million impressions were served at an average CPM of \$9 by the end of the campaign. Out of the approximately 590,000 users listed, about 15,000 bought the new handbag. The primary goal of the campaign is to demonstrate that the advertisements do make a difference. They accomplish this by selecting a small percentage of users reached during the campaign to form a control group. Instead of the advertisement, users in the control group were shown a public service announcement (PSA) about wildfire prevention or Mothers Against Drunk Driving (MADD). They measured how much difference advertisement makes by randomly choosing which users are in the control group and which users are exposed or treated.

The Rocket Fuel team planned to demonstrate the feasibility of the campaign to TaskaBella using simplistic charts and basic statistical analysis in advance of the meeting. They investigated the effectiveness of advertising campaigns. Also, assess to determine the conversion rate of customers as a result of the ad campaign. They would like to summarize the experiment's main procedures, outcomes, and analysis in this report.

Key Procedures

By exporting the relevant fields from the database, Rocket Fuel generated a user-by-user summary of the campaign results. Each row in the CSV file data set (rocketfuel data.csv) represents a uniquely identified consumer in the ad campaign. For each consumer, the following six columns are given.

	user_id	test	converted	tot_impr	mode_impr_day	mode_impr_hour
0	1069124	1	0	130	1	20
1	1119715	1	0	93	2	22
2	1144181	1	0	21	2	18
3	1435133	1	0	355	2	10
4	1015700	1	0	276	5	14
5	1137664	1	0	734	6	10
6	1116205	1	0	264	3	13
7	1496843	1	0	17	7	18
8	1448851	1	0	21	2	19
9	1446284	1	0	142	1	14
10	1257223	1	0	209	3	11
11	1637531	1	0	47	3	13
12	1081965	1	0	61	2	20
13	1037215	1	0	40	5	13
14	1535652	1	0	20	2	19

(Partial data for user summary)

Each row in the dataset represents a different consumer. If test = 1, the consumer is a member of the treated group. And if the test is equal to zero, the consumer is in the control group. Using the control=(1-test) formula, a new column called 'control' has been added to the dataset.

The 'SUM' function has been used to calculate the total number of users in the treated group and a total number of users in the control group. To calculate the number of converted users (users who purchase the handbag) in the treated group and the control group, the 'SUMPRODUCT' function has been used. A user is a converted user in the treated group if and only if test*converted=1, and a converted user in the control group if and only if control*converted=1. The conversion rate for both the treated and control groups was estimated by dividing the number of converted consumers by the total number of users in each group.

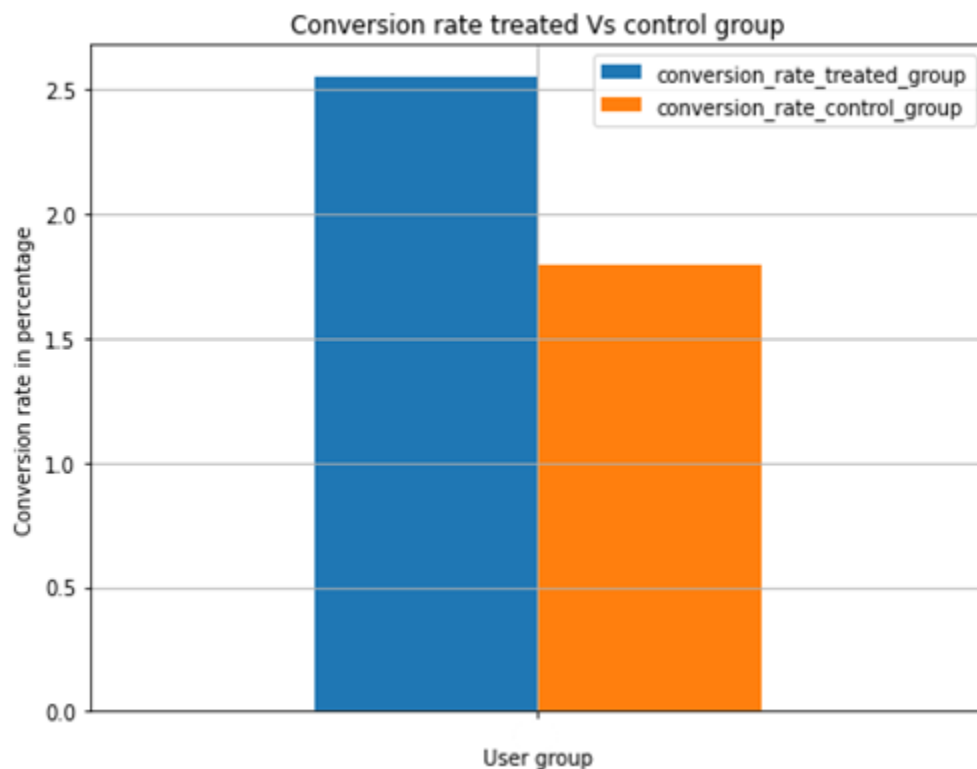
Return of investment(ROI) for the individual group have been calculated by following procedures below:

1. $ROI = (return - cost) / cost$
2. return of x group = value of a converted user * number of x users * difference in the conversion rate
3. cost of x group = number of impressions in the x group / 1000 * cost per thousand impressions

TaskaBella estimated that the total of a converted consumer is \$40 and the cost per thousand impressions is \$9.

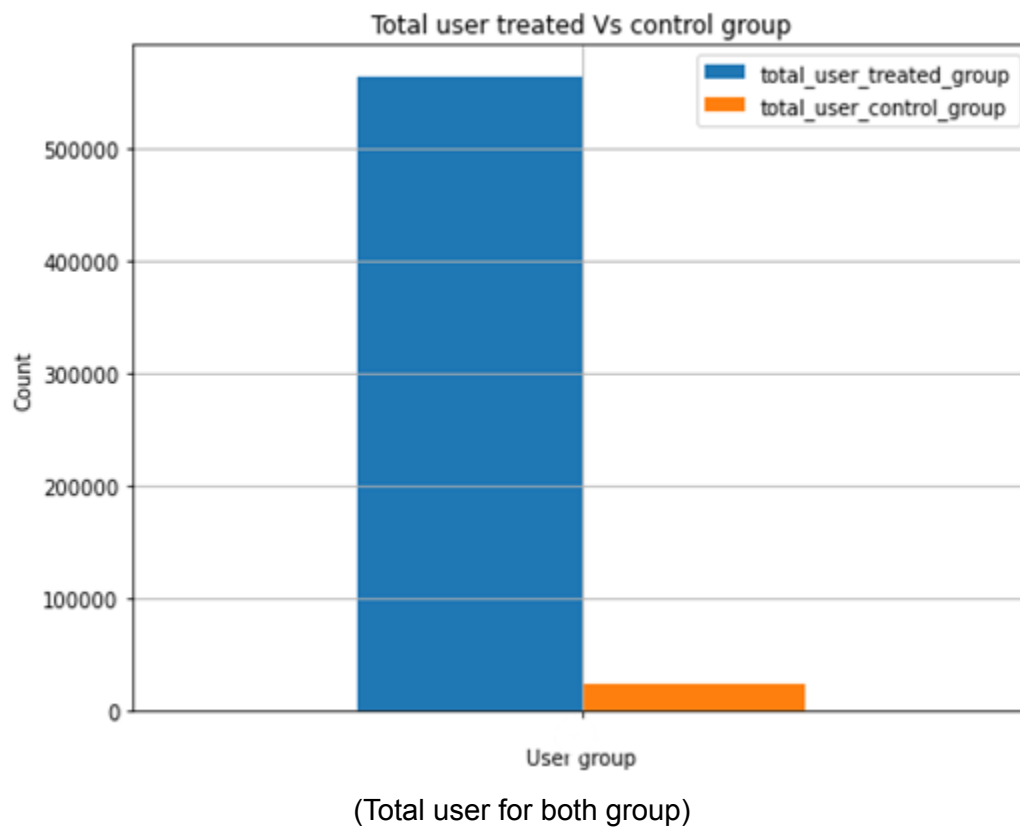
Result Analysis

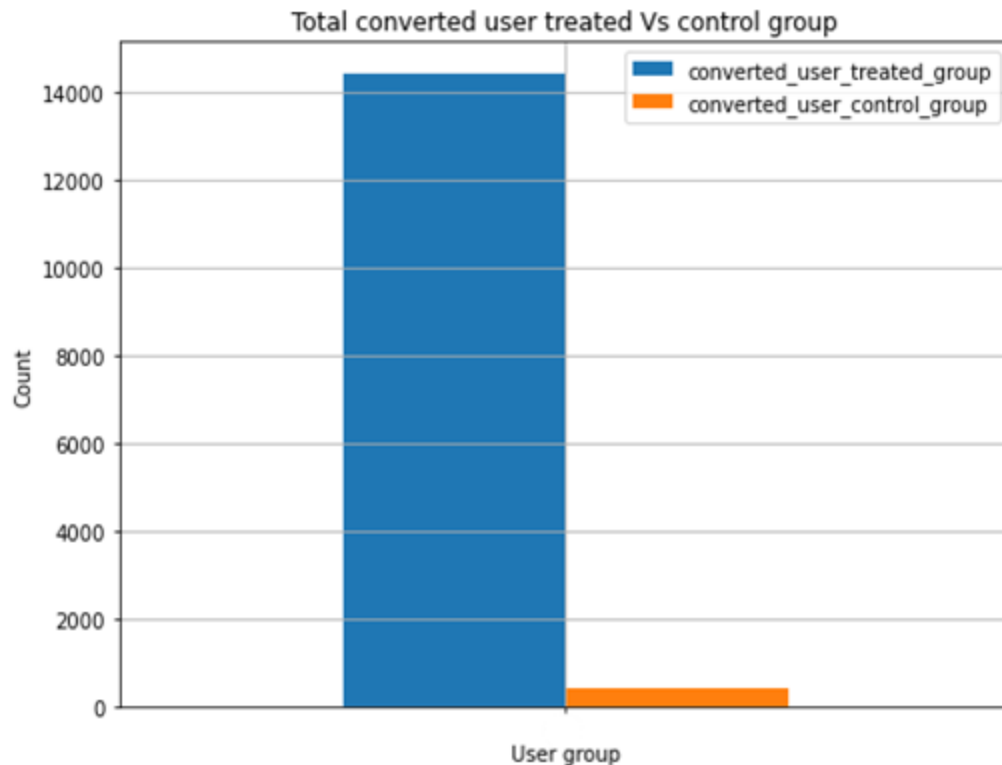
The ad campaign was successful because the treated group outperformed the control group in terms of conversion rate.



(Conversion rate in percentage for both group)

The conversion rate for the treated group is 2.55%, while the rate for the control group is 1.75%. TaskaBella's revenues rose by 0.76% as a result of the ad campaign.





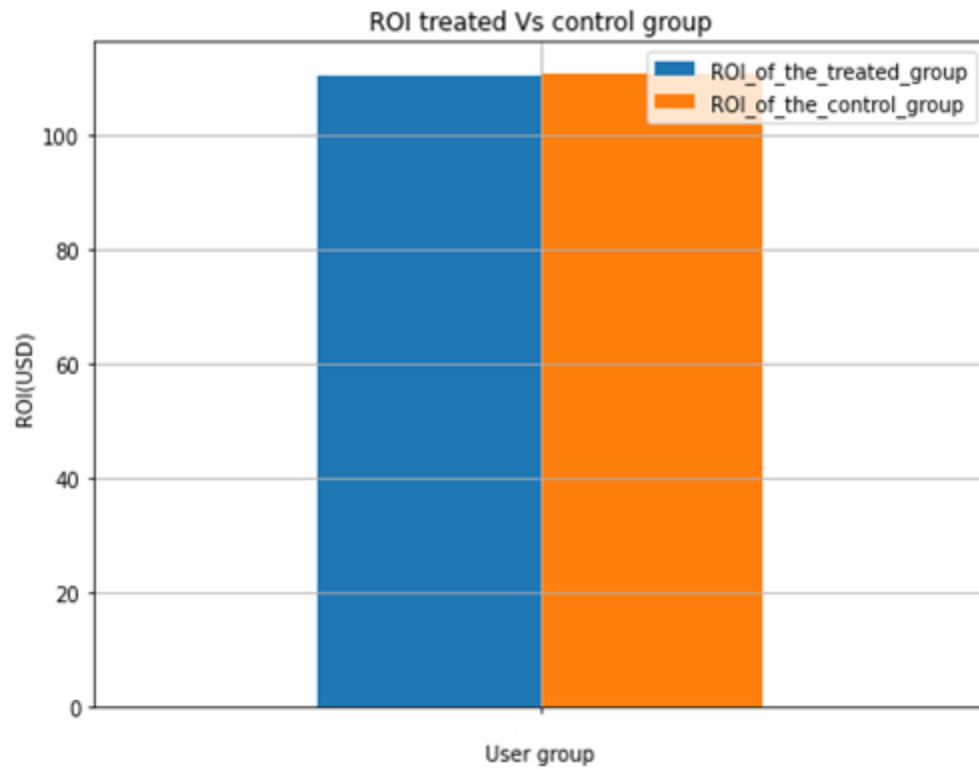
(Total converted user for both group)

The total number of consumers in the treated group was 564577, while the control group had 23524. 14423 people were converted in the treated group who did not participate in the ad campaign, while 420 people were converted in the control group who did participate in the ad campaign.

Return of the ad campaign	Total number of impressions	Cost of the ad campaign	ROI of the campaign	More money by campaign
\$17371928.58	14597182	\$1621.91	\$10709.79043	\$17370306.67

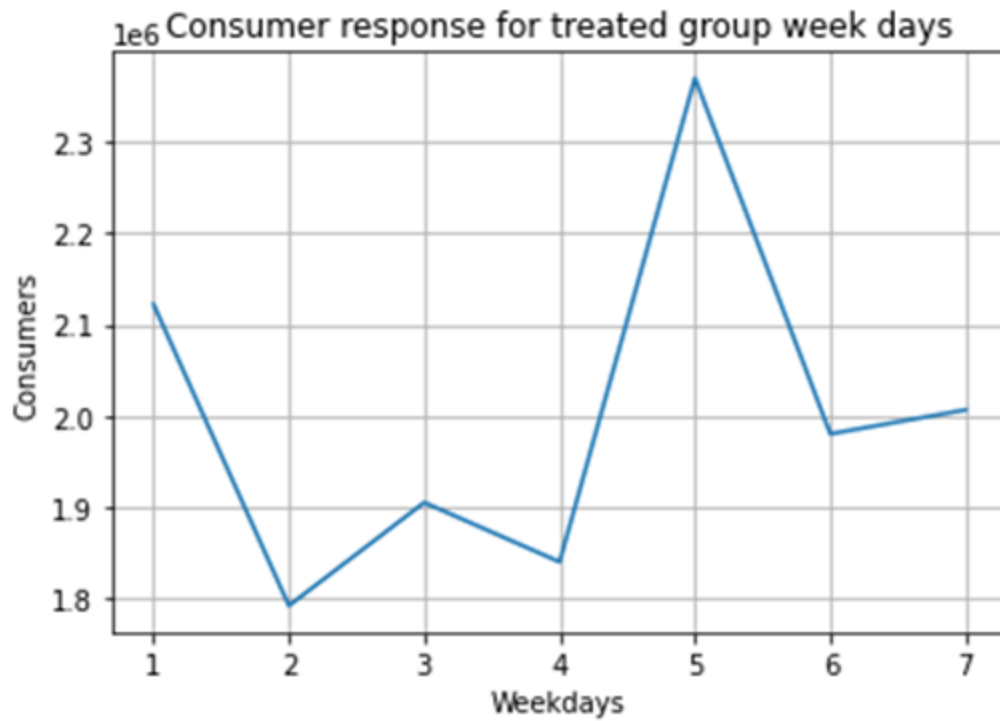
The total number of impressions for the ad campaign was 14597182 people, with a cost of \$1621.91. The net return from the campaign was \$17371928.58 and the expense was \$1621.91, resulting in a profit of \$17370306.67. This campaign's return on investment (ROI) is \$10709.79043. The campaign was profitable, as shown by the positive ROI.

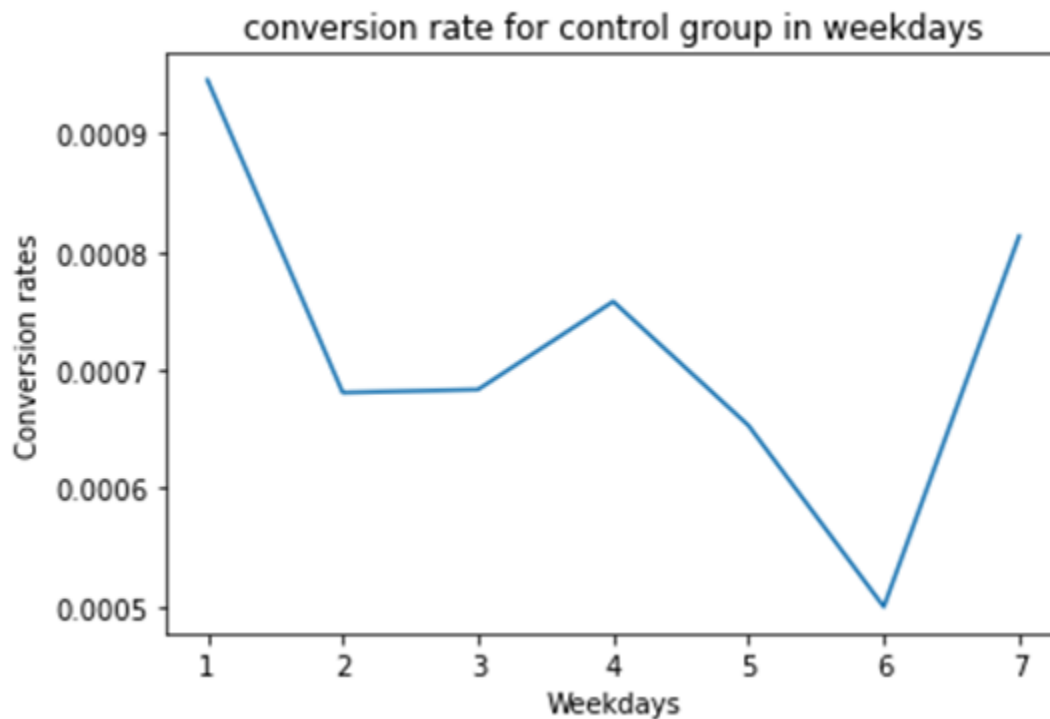
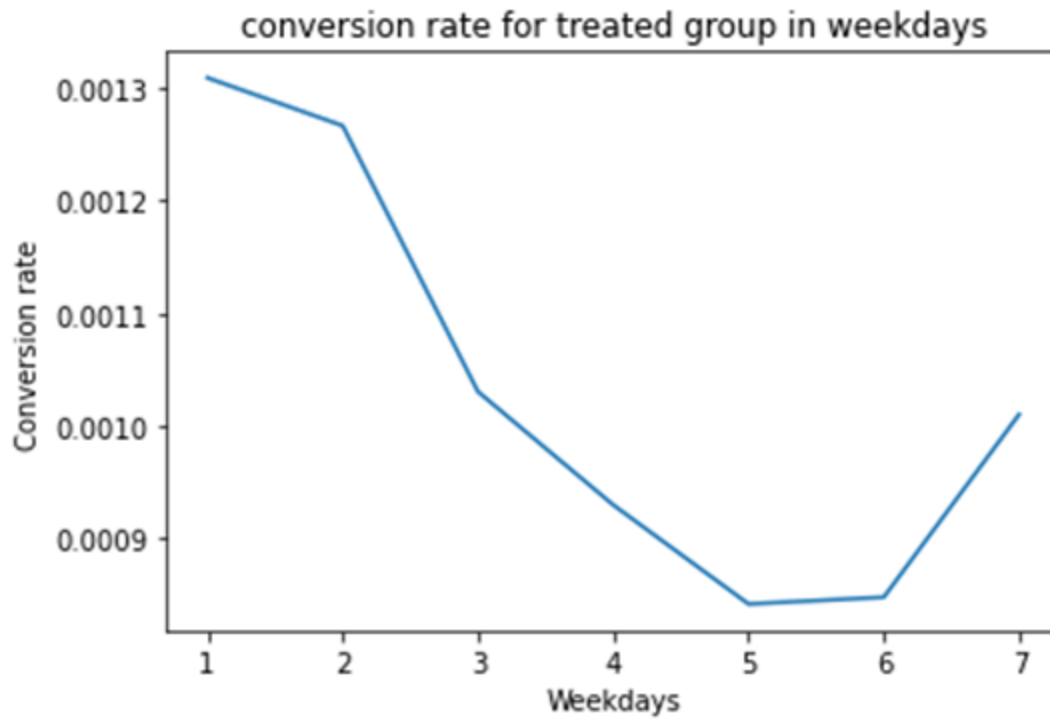
Return of the treated group	Return of the control group	Cost of the treated group	Cost of the control group	ROI treated group	ROI control group
\$17371928.58	\$723829.0756	\$1557.189	\$64.720	\$110.559	\$110.839



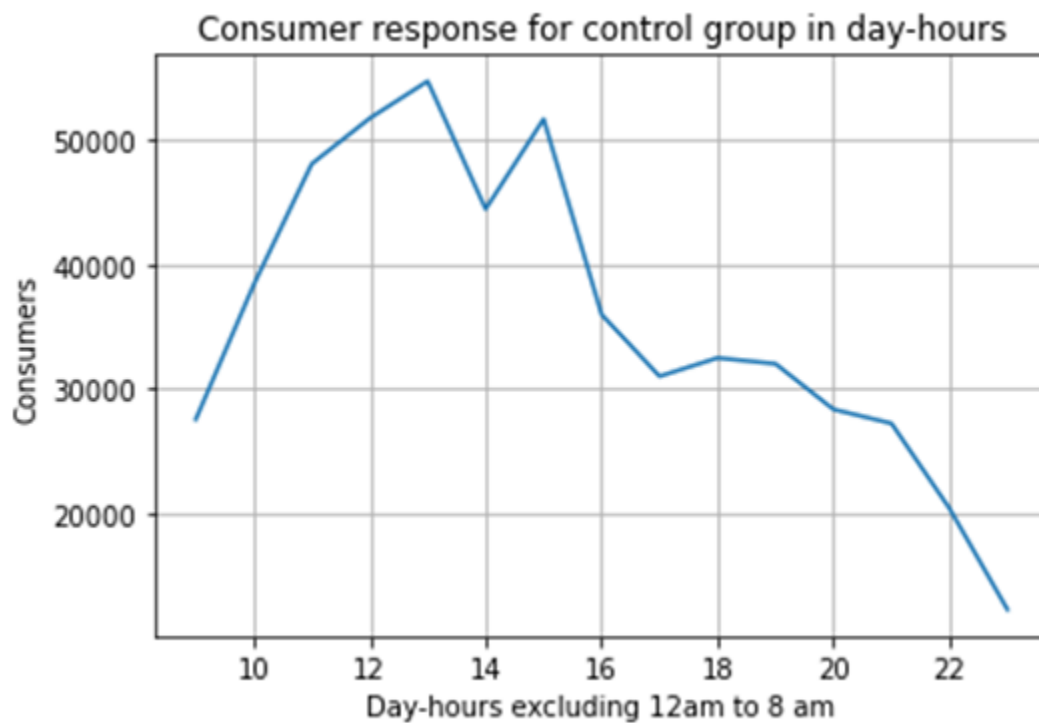
(ROI for both groups)

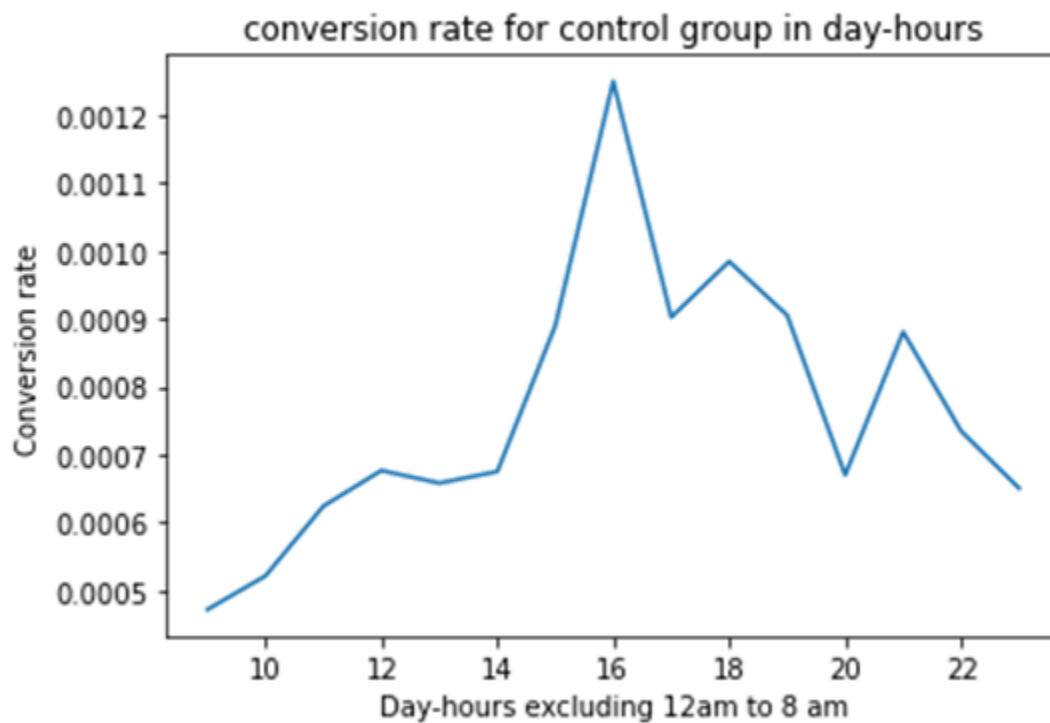
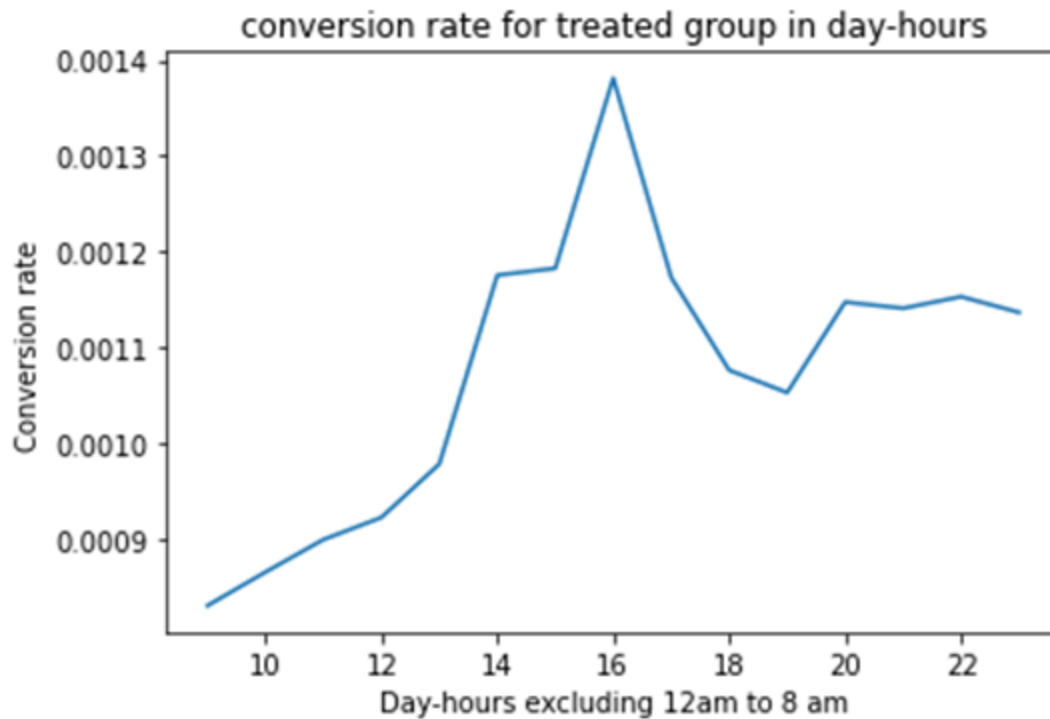
In every thousand individuals, the opportunity cost of the control group is \$64.72, while the cost of the treated group is \$1557.189. The ROI for the control group is slightly higher than the ROI for the treated group. On the other hand, The treated group shows a 0.76% higher conversion rate than the control group.





The treated group has the highest customer response on the fifth day of the week, while the control group has the highest response on the fourth day of the week. However, the majority of sales are made on the first day for the treated group and the first and fourth days for the control group.





At 12 p.m., the treated group has the highest consumer response, while the control group has the highest response at 13 p.m. According to the conversion rate, the majority of purchases are made at 16 p.m. for both the treated and control groups.

Recommendations

This trial ad campaign offers useful insights and perspectives for future investment and revenue. This campaign demonstrated a higher conversion rate and an optimistic ROI. As a consequence, they should continue the Rocket Fuel campaign for future development. To increase conversion rates, they need smart campaigns based on customer behavior. On Friday and Saturday, the number of campaigns should be limited. Consequently, more advertisements should be placed on Monday and Tuesday. The peak hour for conversion is at 4 p.m. So, as of a few hours ago, 12-4 pm is the most productive time of day for conversion. As a result, the most frequent commercials should be placed during this time to boost sales.