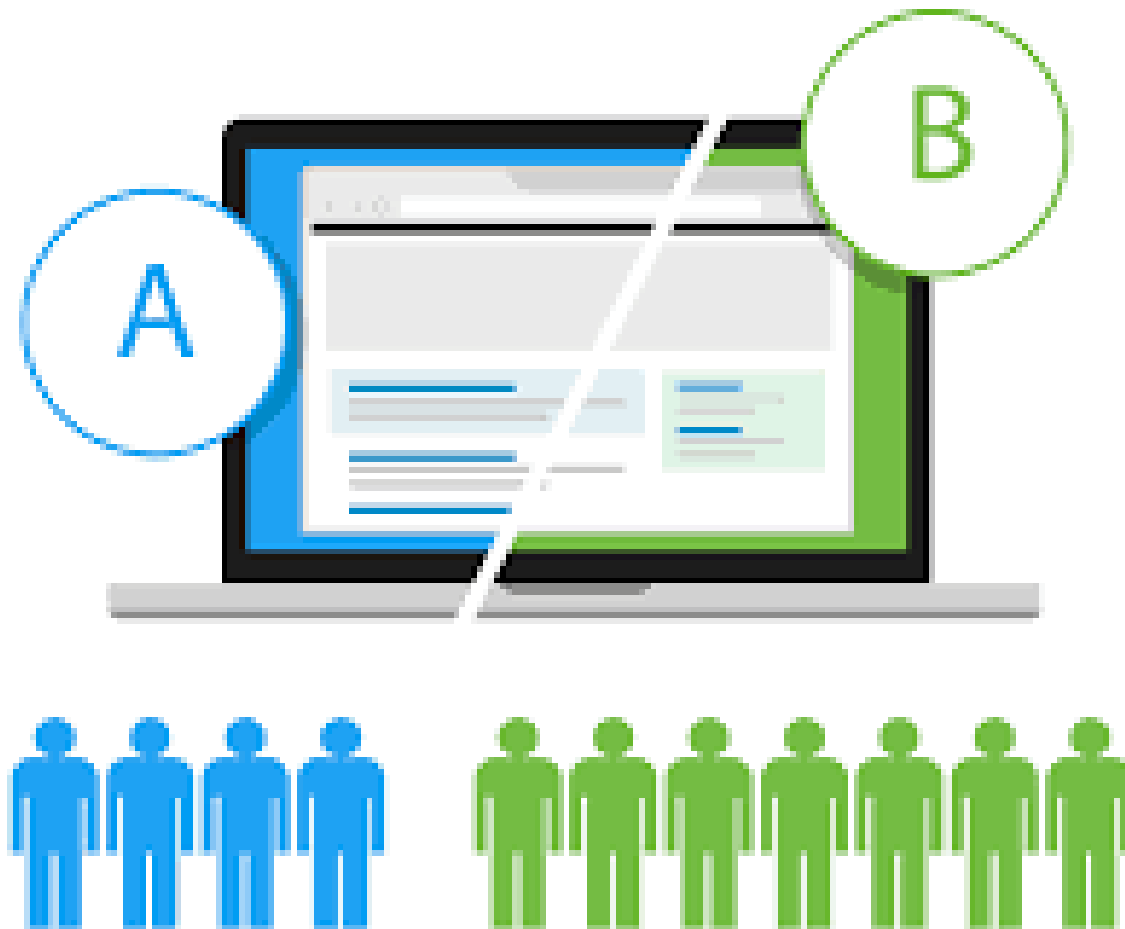


Marketing A/B Testing



Marketing A/B Testing Background

In the world of marketing, when companies want to test the appeal a of new marketing campaign, they run an A/B test, which is a randomized experimentation process, wherein two or more versions of a variable (webpage, page element, banner, etc.) are tested with two groups of people.

- Test Group: This group is shown a campaign ad.
- Control Group: This group is shown a normal, placeholder ad.



An investigation was done with A/B Testing data downloaded from Kaggle at <https://www.kaggle.com/datasets/faviovaz/marketing-ab-testing> to see how effective a hypothetical marketing campaign was.

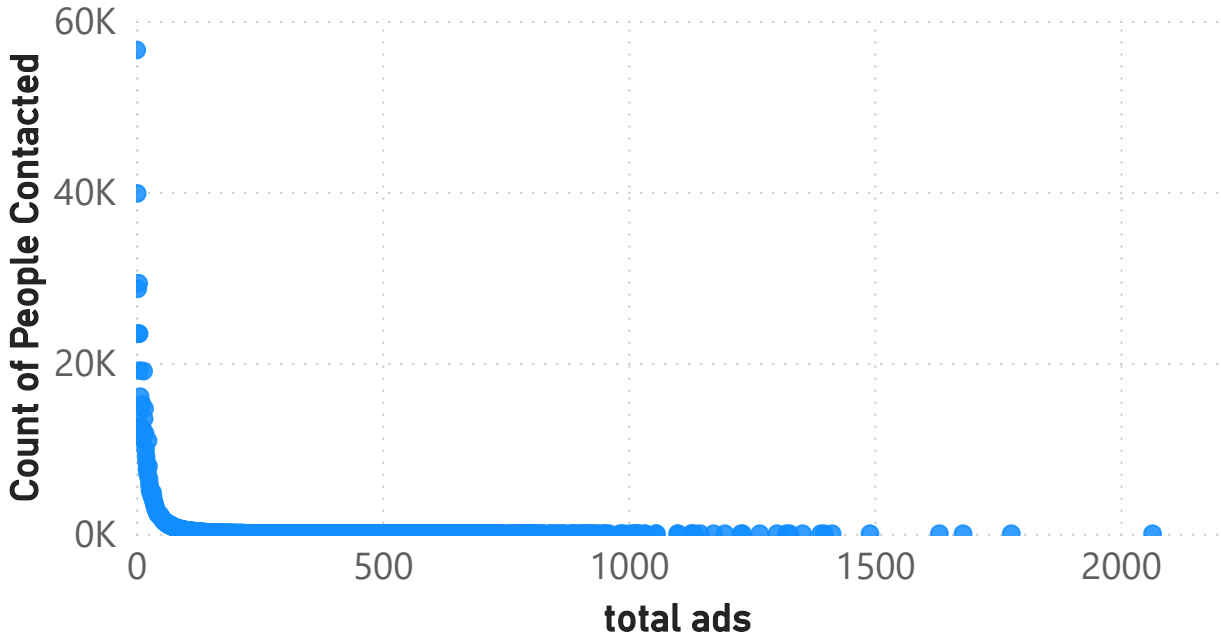
The Test Group was shown a campaign ad (**ad**), while the Control Group was shown a public service announcement (**psa**).

test group	conversion_rate	contingency_table	grand_median_ conversion_rate	p_value	pearsons_chi_squared_statistic
ad	2.55%				
psa	1.79%	0 [6 1]	2.15%	0.03	4.57
Total	2.52%	1 [1 6]	2.15%	0.03	4.57

A Mood's Median Test was conducted on the conversion rate data from the A/B Test, where average daily rates (Sunday-Saturday) were compared between test groups.

The p-value (being <0.05) signifies that there is a statistically significant difference between the groups - namely, that showing people the **ad** as opposed to the **psa** lead to an increase in conversion rate.

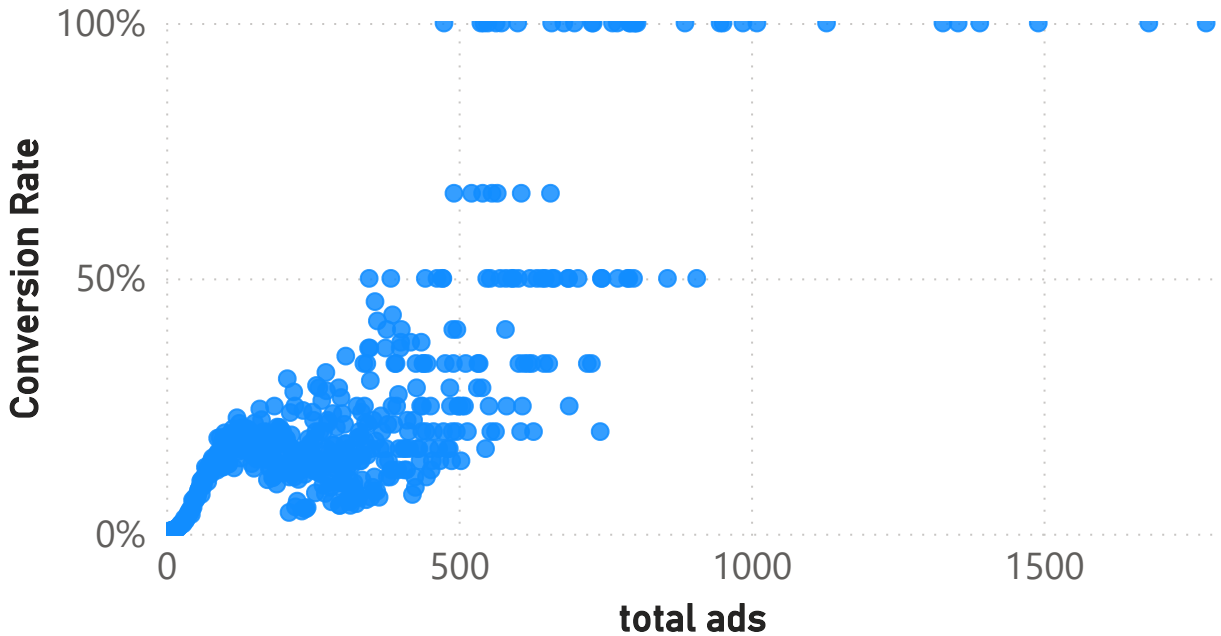
Count of People Contacted by total ads



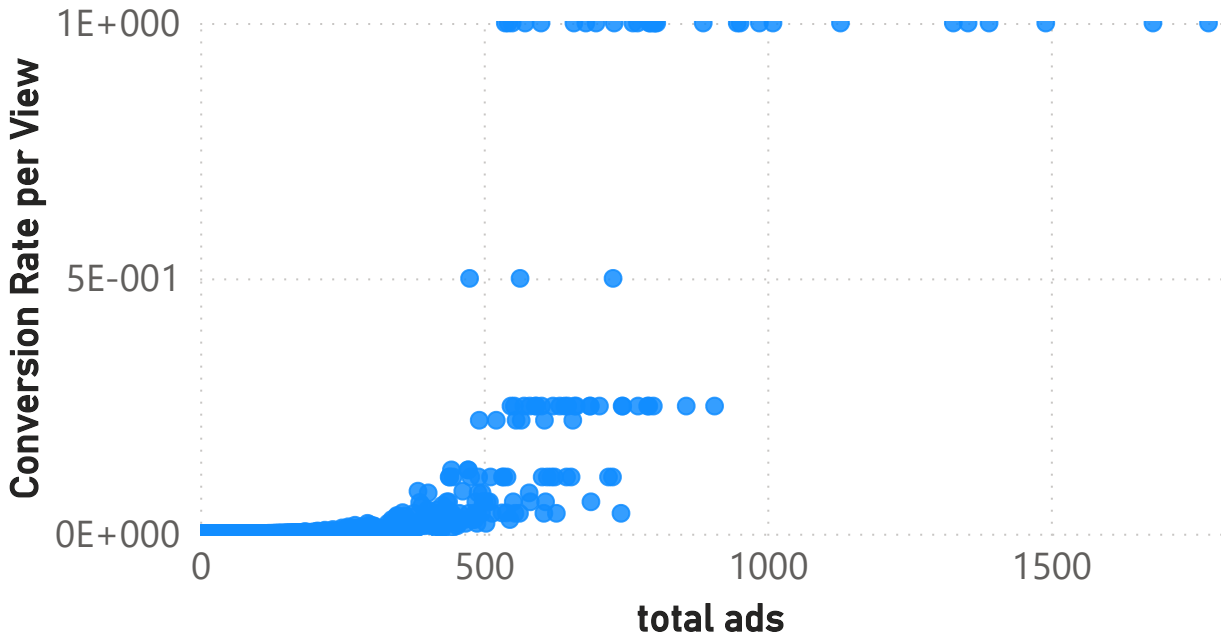
The count of people contacted vs the number of ads seen by person has a negative correlation.

The overall conversion rate & conversion rate per view have a positive correlation with the number of ads seen.

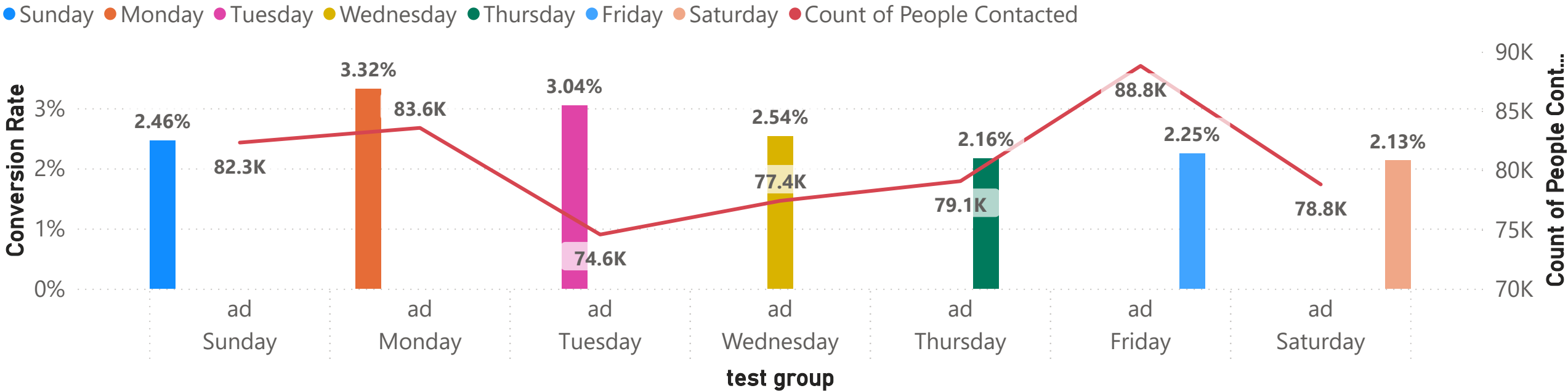
Conversion Rate by total ads



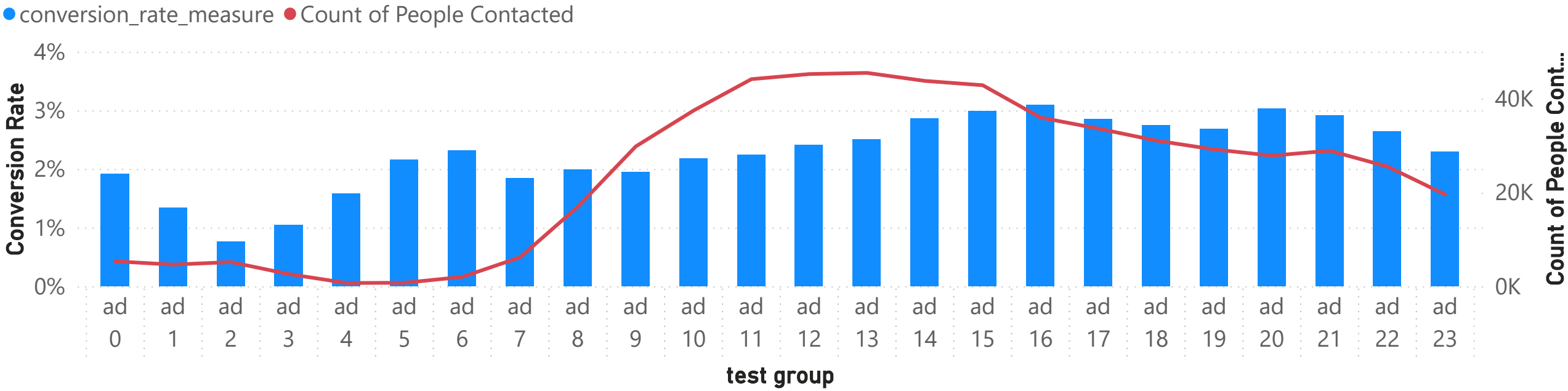
Conversion Rate per View by total ads



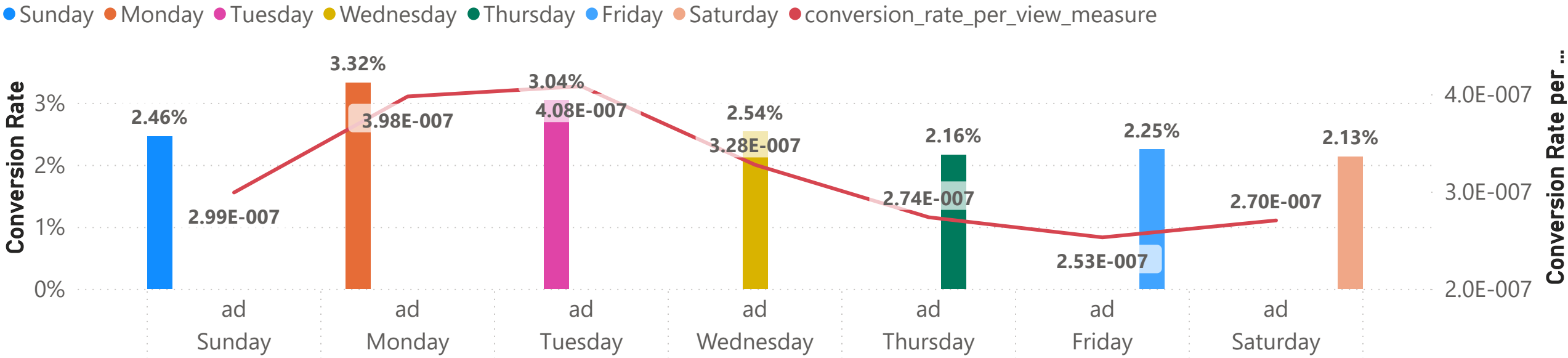
Conversion Rate based on Ads Most-Seen Day



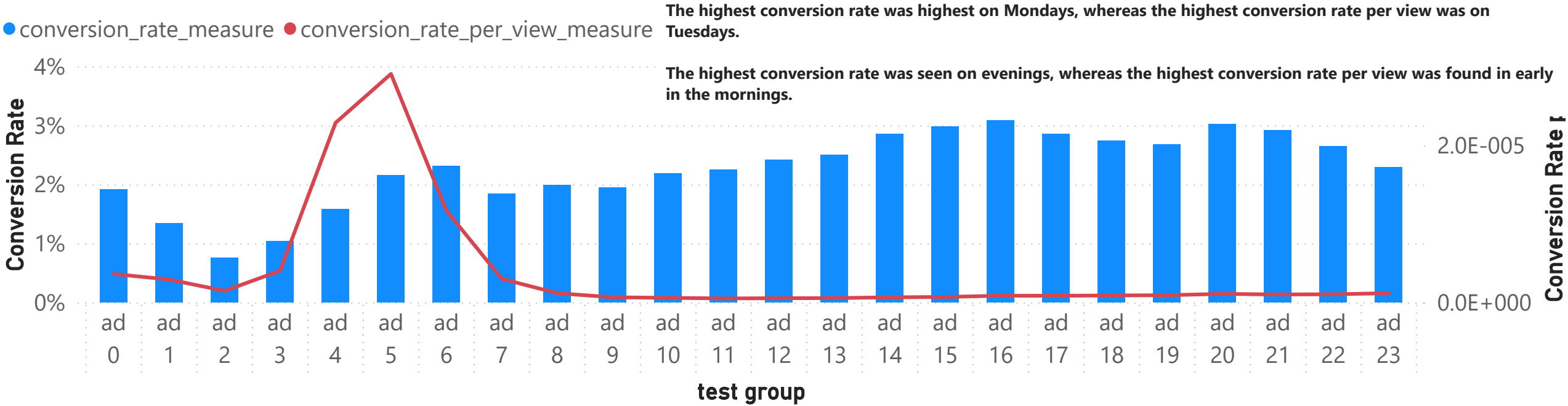
Conversion Rate based on Ads Most-Seen Hour



Conversion Rate based on Ads Most-Seen Day

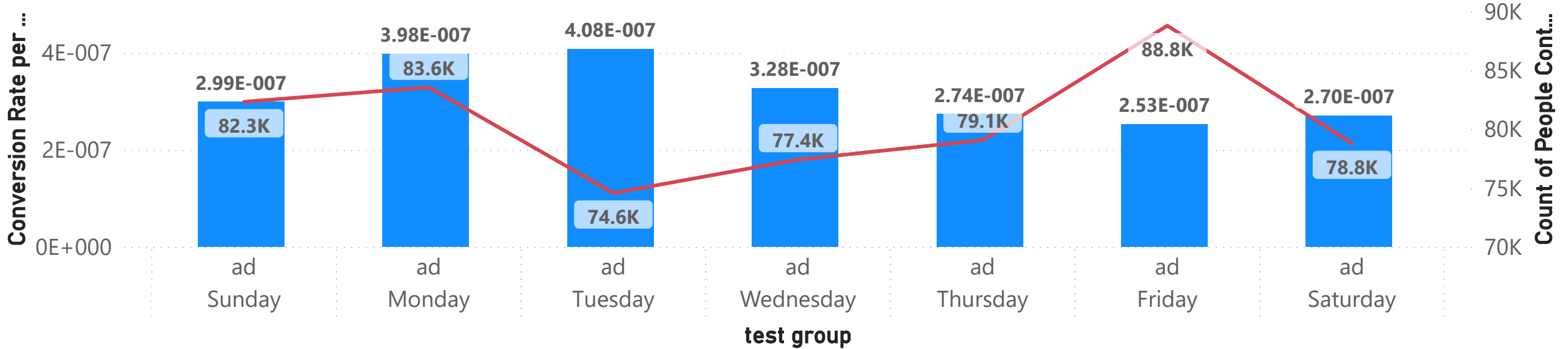


Conversion Rate based on Ads Most-Seen Hour



Conversion Rate based on Ads Most-Seen Day

● conversion_rate_per_view_measure ● Count of People Contacted

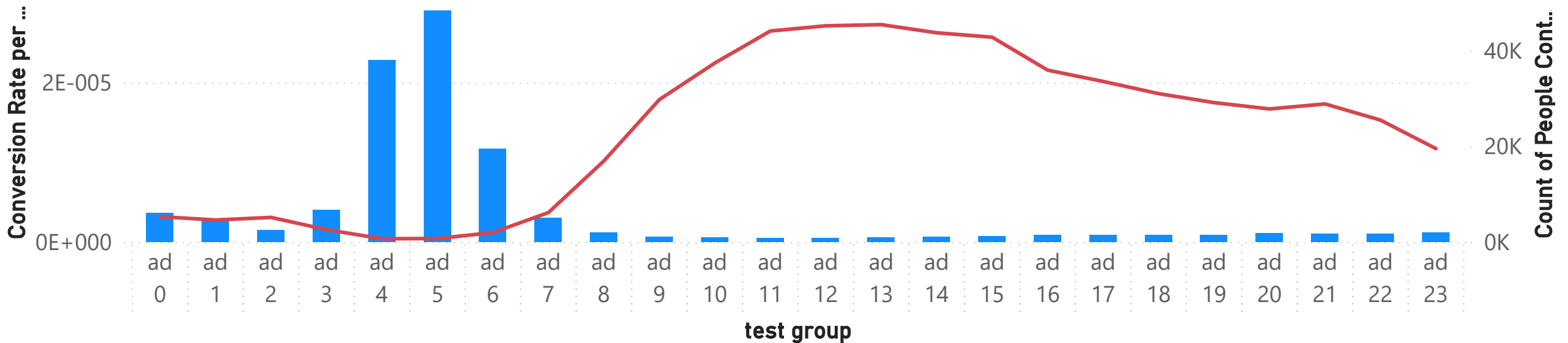


Conversion Rate based on Ads Most-Seen Hour

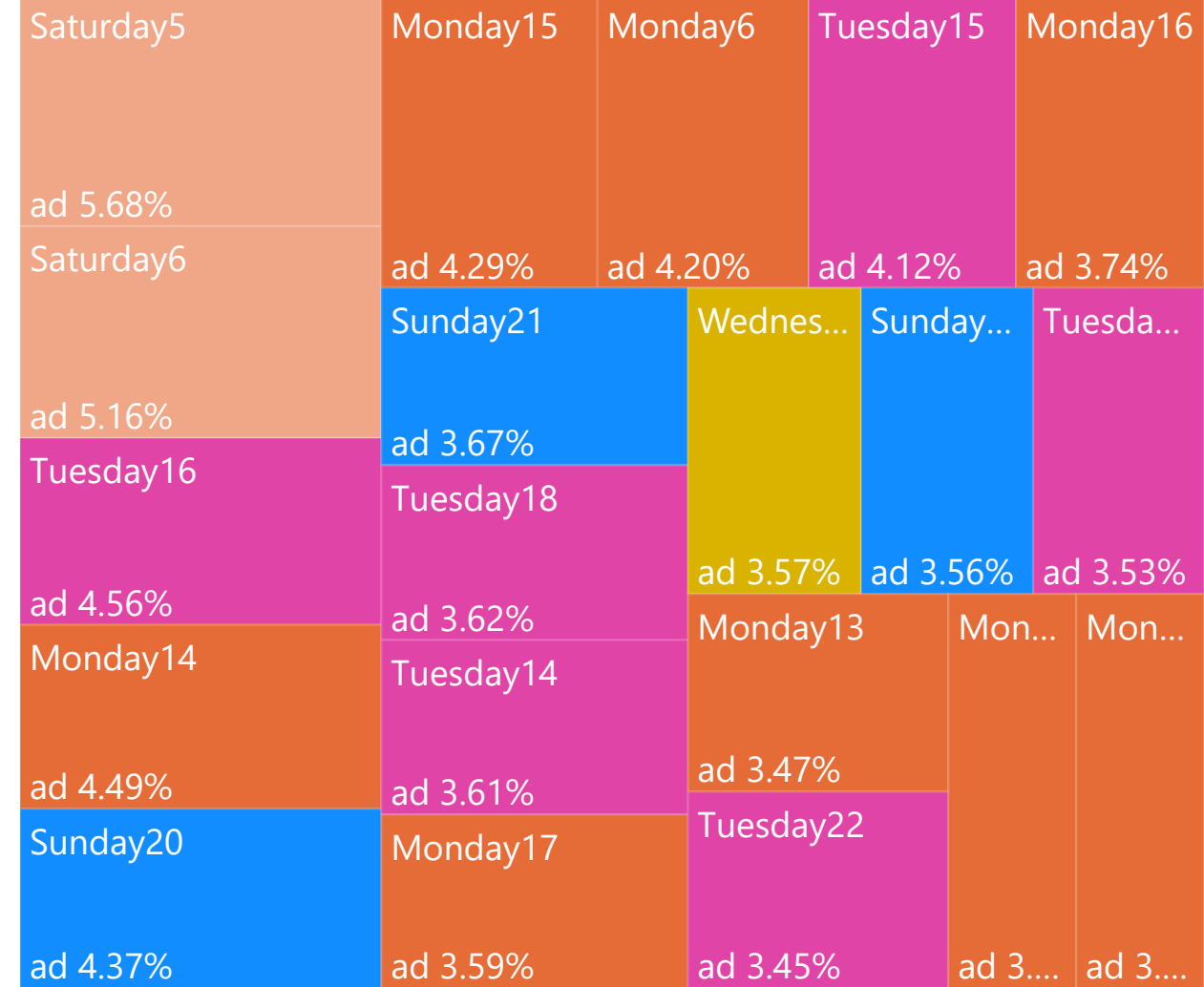
The highest conversion rate per view was on Tuesdays, whereas the highest contact count was on Fridays.

● conversion_rate_per_view_measure ● Count of People Contacte

The highest conversion rate per view was found in early in the mornings, whereas the highest contact count was in the afternoons.



⏪ conversion_rate by most_ads_day_hour and test group

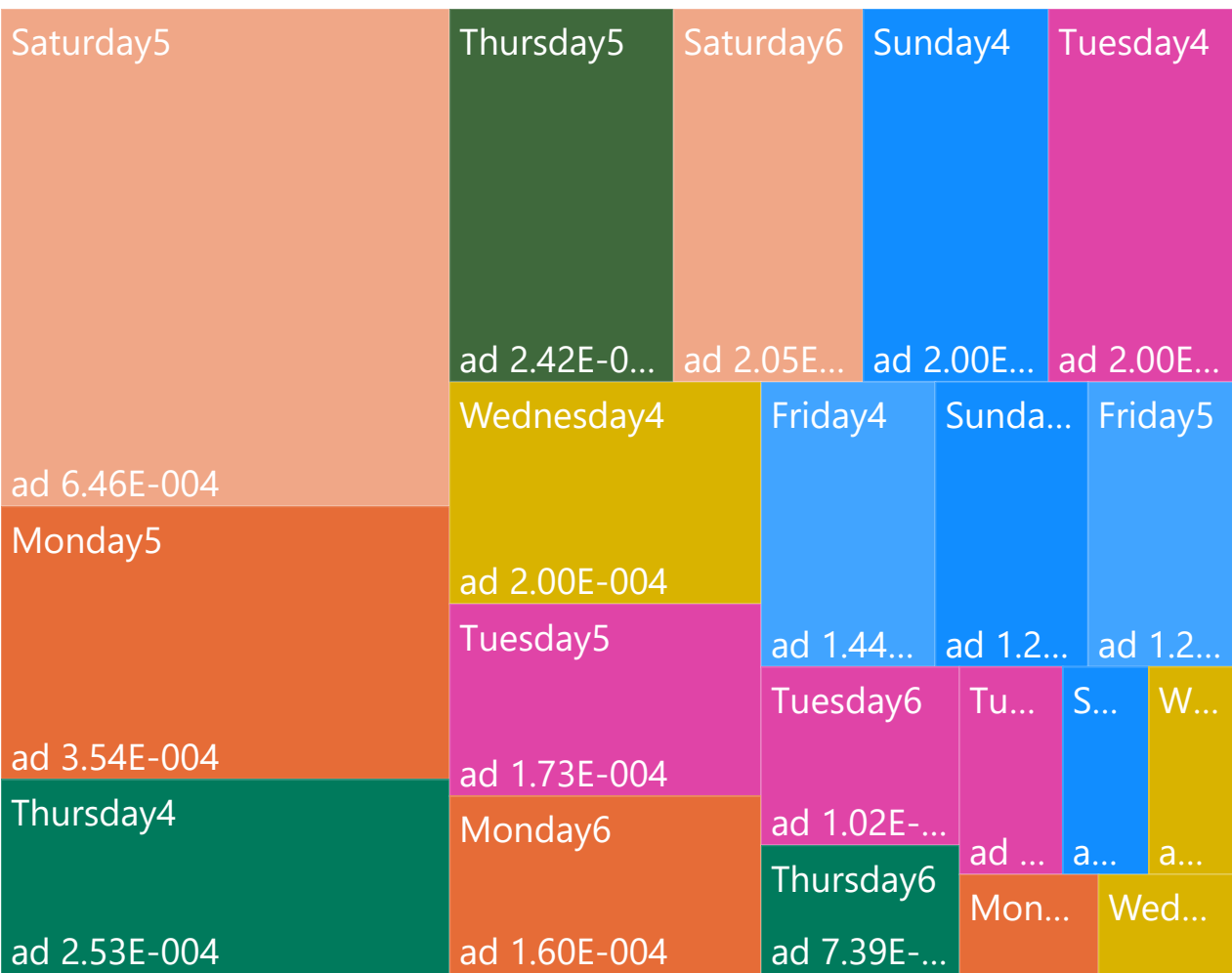


The highest conversion rates are obtained 5 AM - 6 AM on Saturdays, 2 PM - 6 PM on Tuesdays, or 12 PM - 4 PM on Mondays.

The highest conversion rates per view are obtained early in the mornings on every day of the week.

Target ads to timeslots with the highest conversion rate per view if ads cost money. Otherwise, target ads to timeslots with the highest conversion rate.

conversion_rate_per_view_measure by most_ads_day_hour



References

1. <https://www.kaggle.com/datasets/faviovaz/marketing-ab-testing>