Google Ads Dataset Analysis

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Introduction

This report provides an overview of the performance of your Google Ads campaigns over two months, with a focus on user engagement, ad efficiency, and return on investment. I aggregated data across all campaigns and ad groups, to identify key trends in impressions, clicks, cost, and conversions.

Specifically, the analysis aims to:

- Understand daily trends in ad engagement and reach.
- Evaluate the efficiency of campaigns through cost-related metrics (e.g., CPC, CPA).
- Identify which campaigns or ad groups are delivering the highest return on investment.
- Highlight underperforming areas that may benefit from optimization.
- Provide actionable insights to support better budget allocation and strategic planning.

This analysis is meant to support the client-side Marketing team in making data-informed decisions that improve ad performance and overall marketing impact.

Visualizations

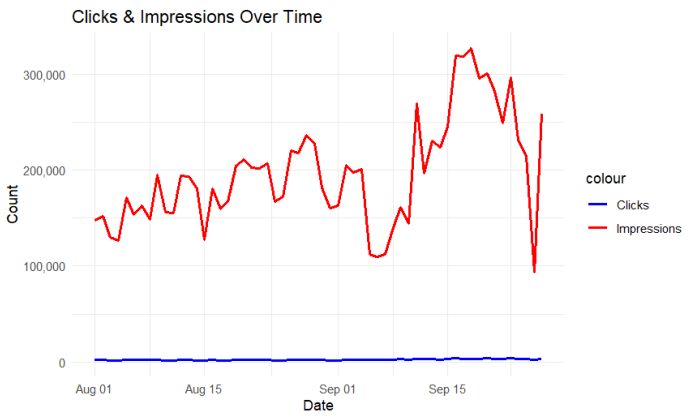
To better understand how the Google Ads campaigns performed over time, I visualized key performance indicators using daily aggregated data.

Each chart is focused on a specific performance metric or comparison — such as ad visibility (impressions), user engagement (clicks and CTR), efficiency (CPC and CPA), and outcomes (conversions and conversion value). Where relevant, I have included short insights and takeaways beneath each chart to highlight notable patterns or fluctuations.

The following sections walk through these visual insights in detail.

Graph cluster 1: Clicks & Impressions across time

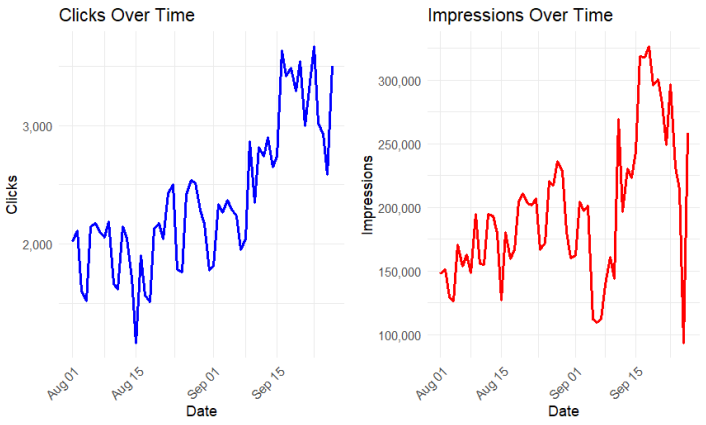
As a first step, we need to look into the engagement our ads achieve. The graph below shows the number of daily clicks and the number of daily impressions during the two month span.



As expected, the number of impressions is significantly larger than the number of clicks. During August, the number of impressions stayed relatively stable, with an estimated average of 180.000 impressions per day. During September, we saw a big drop, then a very significant

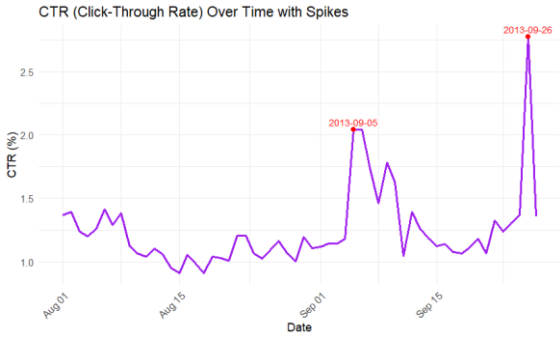
increase, another big drop, and finally another big increase, which brought us to ~ 260.000 impressions per day.

Since the number of clicks is a lot smaller than the number of impressions, the range of the click values is not visible in the graph due to its scale. We can examine the click variable range by separating the two variables into two graphs:



The number of clicks has also increased in September, as shown by the left plot.

Since we examined these two metrics, let's look at the metric that shows their relationship, CTR (reminder: CTR = Clicks/Impressions * 100):



During August, CTR kept a slightly decreasing trend. On the 5th of September, CTR achieved a relative peak, then it dropped again, and then it reached an all-time high on the 26th of September, before suddenly dropping again. On both days, only campaign 1 was used, so

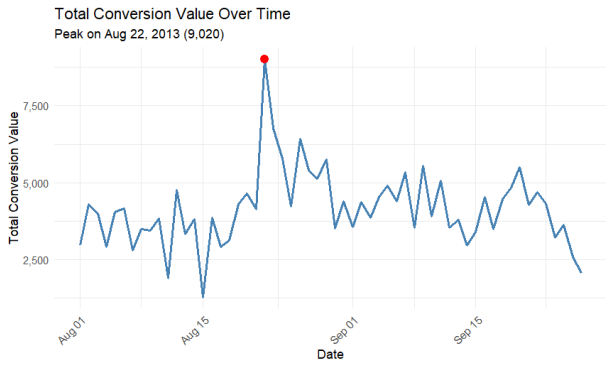
perhaps this campaign type is more engaging and effective at getting clicks proportional to their impressions. A parameter that may have contributed to the sudden increase is a change in the target demographic, while the dips may have occurred from ad fatigue (user has seen the ad too many times), or technical issues, like an improper landing page or broken links.

All in all, it looks like all three metrics have shown a peak at the end of September, which means we are slowly optimizing our ad engagement.

Graph cluster 2: Conversion Value

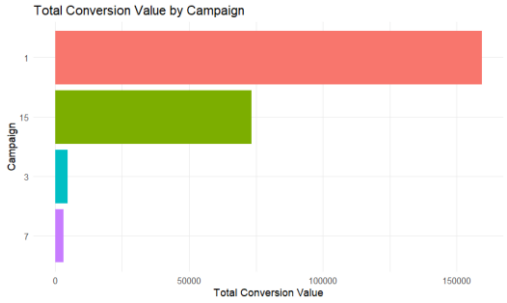
To run a successful campaign, profit is needed. In other words, we need to reduce the ad cost, while simultaneously increasing the conversion value.

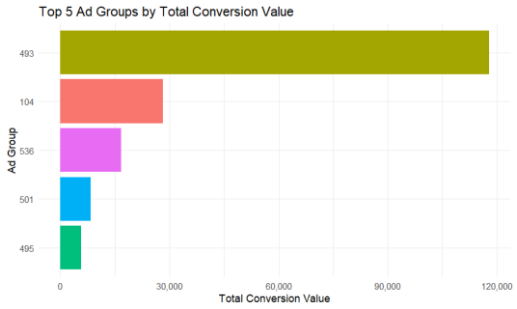
Before that, let's take a look at the total conversion value of each day.



It reached a peak on the 22nd of August, and the monetary return was 9.020€. Apart from that date, most of the values in September are slightly larger than the values in August, but there is no significant linear increase. The biggest dips were observed during mid August. A reason this may have happened is because a lot of people vacation during mid August, and do not use their phones for a large part of the day.

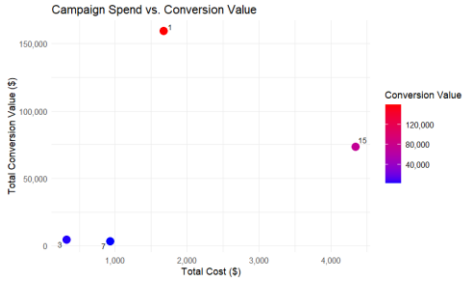
It is important to know which campaigns and ads contributed most to the total conversion value.





Most of the total conversion value came from the use of the campaign types 1 and 15, and if we group the data by the ad group, most of the gain came from group 493.

Finally, let's examine the total cost of each campaign, in comparison to the total conversion value it granted.

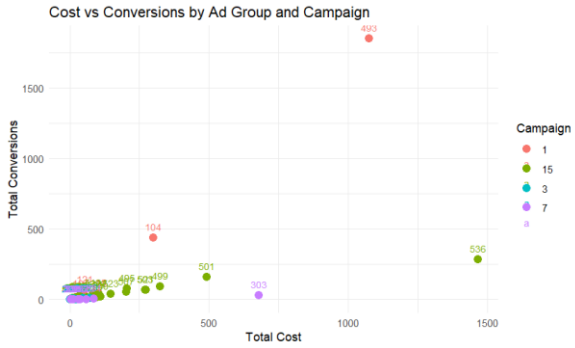


The most expensive campaign was campaign no. 15, but the most profitable campaign (and by a quite significant margin) was campaign no.1 . It would profit the company to reduce the costs spent on campaign no.15, and check which conditions (for example, target audience, ad font/layout etc.) make campaign no.1 so successful.

Graph cluster 3: Conversions

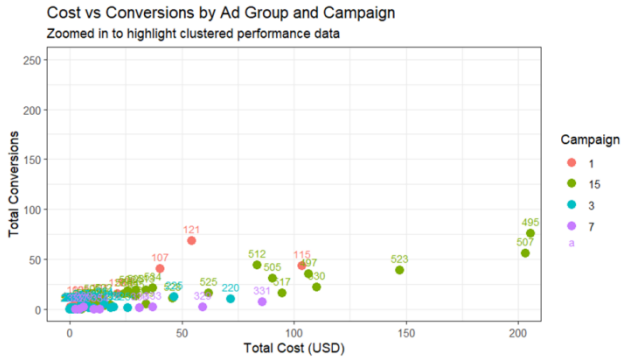
Apart from the conversion values, it is crucial to examine if the number of conventions showed a positive/negative trend. Ideally, we want to increase the number of conventions, while reducing the total cost.

First, let's look at a graph comparing costs and conversions. Since we want to find out which ad groups and campaigns optimize the cost and the number of conventions, the data is grouped by two variables, ad group and campaign.



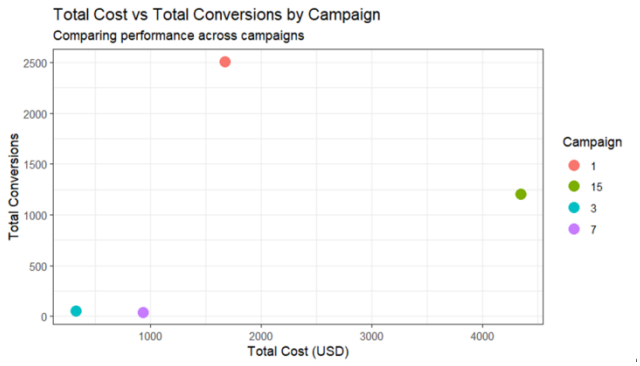
We can see two very clear outliers: Data point campaign 15 & ad group 536, and data point campaign 1 & ad group 493. The first one is by far the most expensive ad combination, with a not very large conversion result. The second ad combination brings by far the most conversions, but is also fairly expensive, albeit less than combination 1.

Since most of the clustered points in the bottom left corner are not visible, we can zoom in to see them:



The most expensive of these combinations also belong to campaign no.15 , with a conversion number a bit larger than the one of the other campaigns, except campaign no.1 in a few cases.

If we only use the campaign as a grouping parameter, we get this plot:

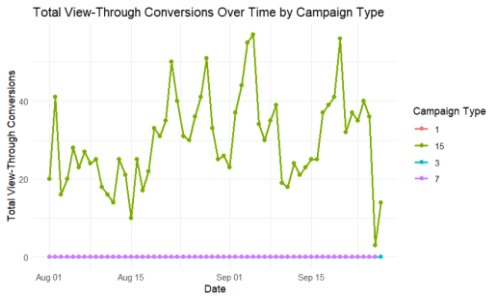


Again, we see that campaign no.15 is the most costly, while campaign no.1 is way less costly and more conversion effective.

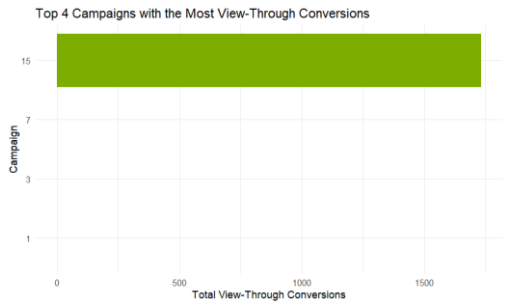
Group cluster 4: View-through conversions through time by campaign

To capture the full effect of our ads, we also need check how many view-through conversions they generate.

The following plot shows the total number of view-through conversions each campaign type generated on each day.

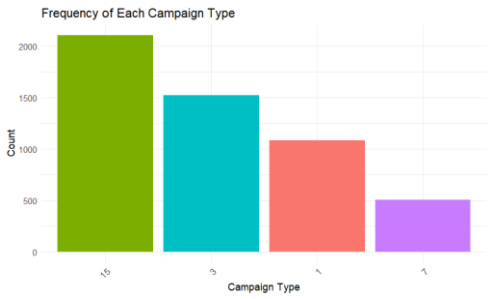


All of the view-through conversions in our dataset were caused by campaign no.15 . This result is also verified by the boxplot below:



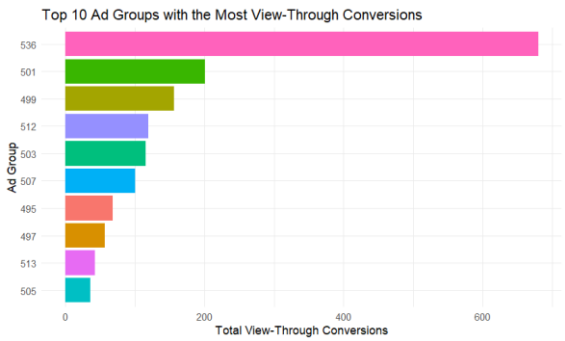
Previously, we concluded that campaign no.1 was the most profitable, based on its monetary and conversion return, and that campaign no.15 was the most expensive one. Interestingly though, these results show that although campaign no.15 does not return that much revenue or immediate conversions, it is responsible for all the late stage conversions, which is equally important. Therefore, campaign no.15 should not be eliminated from the marketing plan, or changed significantly.

The following barplot shows that campaign no.15 is also the most used campaign type. Since the users see it around more often than the other campaign types, they may subconsciously recognize it more easily later, which explains the many view-through conversions. However, the other campaign types also appear quite frequently, so is is interesting they have no view-through conversions at all.



An idea to impove the view-through conversion number is to customize the ad more, with bright colours and bold letters, to make it stand out.

If we group the data by ad groups, we can see which ones bring the most view-through conversions in the barplot below:

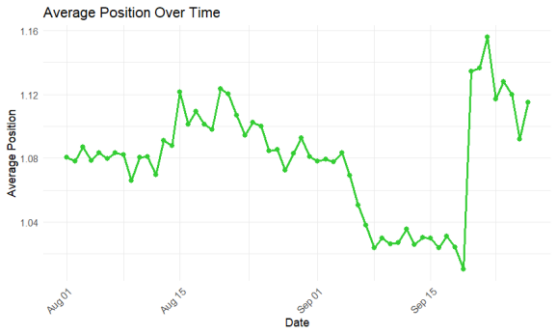


Obviously, all of these observations belong to the campaign type 15.

Group cluster 5: Average position

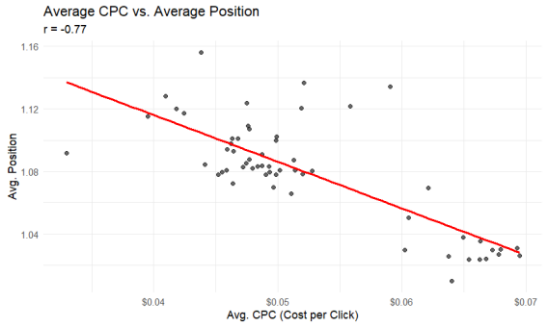
To evaluate our ad performance, we also need to examine its website position/rank.

This graph shows how the average ad position changed over time. The lower the number of the position is, the better (since the ideal spot is 1, which secures us the top of the search result list).



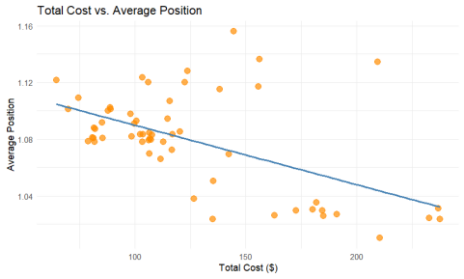
It looks like the position dropped a lot in September, until it suddenly spiked up again.

One of the parameters that influences the ad position the Cost per Click price (CPC). Below, we can see their correlation.



The more we pay for one ad click, the more the ad position drops, which is a positive conclusion. We would not want to pay more just for the position to increase.

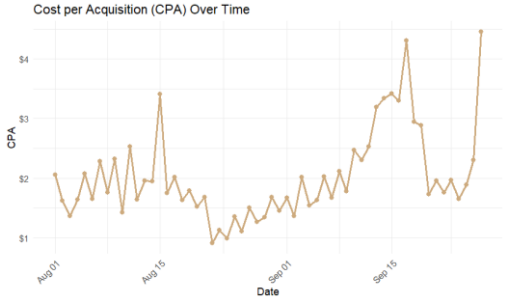
The same conclusion holds true if we compare the total ad cost to the position:



Group cluster 6: CPA

To evaluate the cost-effectiveness of our campaigns, we also need to evaluate the Cost per Acquisition (CPA) performance across time.

The line graph is shown below:

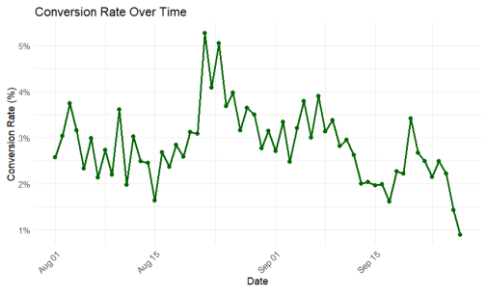


The CPA spikes in the middle of August, then keeps dropping until the first week of September, when it starts rising again. It reaches a tall peak in the middle of September, then drops suddenly again, and then suddenly spikes up again, giving us its highest value yet.

Periods where the CPA increases may indicate either rising ad costs or a drop in conversion performance, suggesting inefficiencies in campaign execution or changes in user behavior. Conversely, declines in CPA highlight more cost-effective conversions, potentially due to improved targeting, ad relevance, or landing page performance.

Group cluster 7: Conversion rate

As a last step to our analysis, we ought to examine the conversion rate, to determine at which rate people convert thanks to our ads.

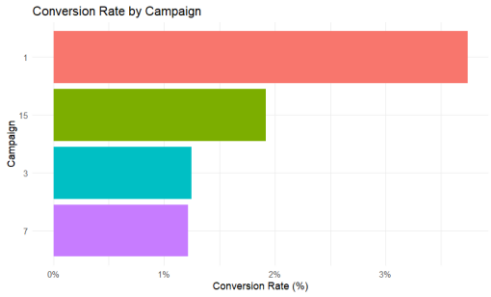


The most successful conversion rate occurred during mid-to-end August, and after that, it kept dropping until the final date.

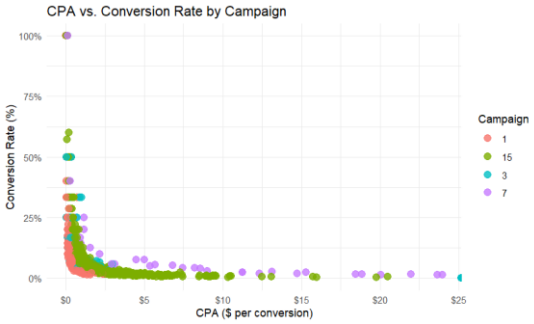
To enhance conversion rates, it is essential to optimize both the user experience and the relevance of the content presented to visitors. Start by ensuring that landing pages align closely with the promises made in your ads, providing a clear and compelling call to action (CTA) that guides users toward the desired outcome. Additionally, simplifying forms and improving mobile-friendliness can significantly reduce barriers to conversion. Finally, creating a sense of urgency with limited-time offers or countdown timers can prompt visitors to act quickly, further boosting conversion rates. By implementing these strategies and continuously monitoring performance, you can significantly improve conversion rates and reduce wasted advertising spend.

To improve the total conversion rate, we need to figure out which campaigns contribute to the rate the least. The barplot below shows

campaign no.1 contributes the most, and campaigns no.3 & 7 could improve in this regard:



Below we can see the correlation between CPA and the conversion rate. The campaigns with the highest CPA are campaign no.15 and campaign no.7. All the campaigns have some observations with a high conversion rate.



To reduce the CPA score for the campaigns 1 & 15, we can make sure the ads align closely with keywords and landing pages, focus on keywords that show buying intent ("buy," "quote," "discount"), and refine our audience targeting, to increase the total conversions (the CPA denominator).

Conclusion

Overall, this analysis has provided valuable insights into the performance of your advertising campaigns. By carefully examining key metrics such as click-through rate (CTR), conversions, total conversion values etc., we have

identified both strengths and areas for improvement in our current advertising strategy.

Moving forward, it is important to improve the view-through conversions of the campaign groups except campaign no.5. As for campaign no.5, it may be valuable for view-through conversions, but we need to keep an eye on its cost. Finally, there is big room for improvement when it comes to the total conversion rate of the ads, specifically by improving the conversion rates of the campaign groups no.3 & 7.

As for the strengths of these campaigns, clicks, impressions, and CTRs were all at their peak at the end of September, which means our ad engagement is improving. Finally, there seems to be a good trade-off between the average CPC values and the average position values.