Digital Marketing Campaign Analysis

Clicks, Conversions, ROAS, and Keyword Performance

By Maria Cardillo

August 19, 2025

Outline

- Project overview & objectives
- Methodology
- Data Cleaning
- Data & Analysis
- Key Takeaways
- Recommendations
- Conclusion
- Appendix

Business Scenario & Objectives

Business Scenario

- After one month of collecting Google Ads data, our company is performing historical analysis to determine best strategies to maximum ROAS.
- We will evaluate daily, device, and keyword-level trends to optimize our marketing strategy.

Objectives

- How can we use historical campaign data to make more informed spend decisions that maximize ROAS while maintaining or growing sales volume?
- Understand campaign performance and identify trends in clicks, conversions, and revenue.

Methodology

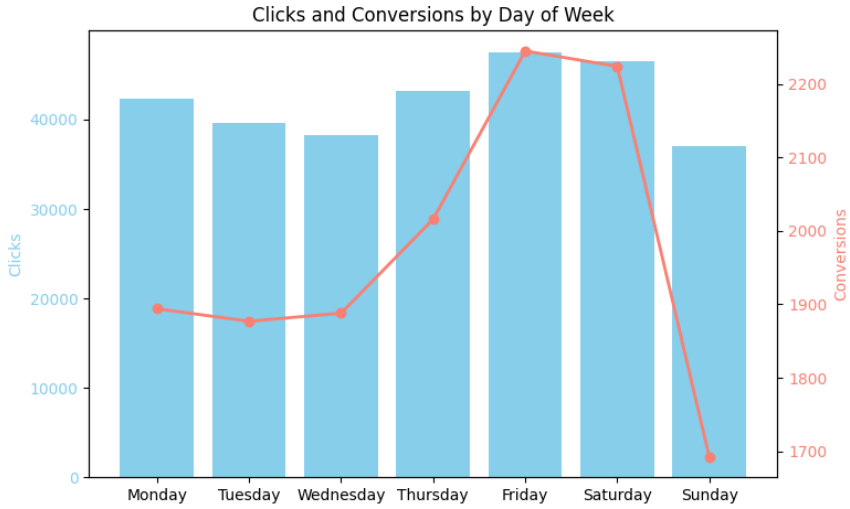
- Kaggle Dataset
- To understand what factors maximize ROAS, we will be reviewing clicks, conversions, conversion rates, cost, ROAS, and sales amounts over one month of daily Google Ads data. We will also be analyzing devices, keywords, and days of week.
- This dataset provides both raw performance metrics and calculated fields, allowing us to evaluate efficiency at each stage.

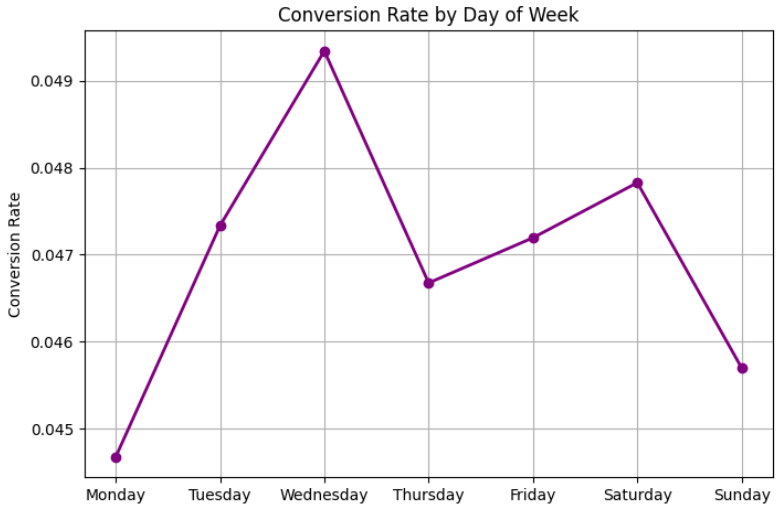
Data Cleaning

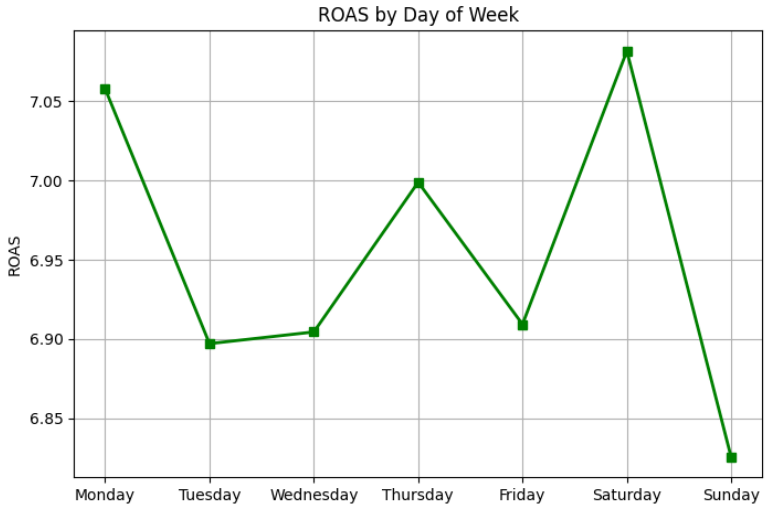
- Checked for nulls in critical fields and recalculated conversion rates
- Dropped ~18% of rows with missing raw data
- Standardized text fields (Campaign Name, Device, Keyword, Location)
- Created calculated metrics: Cost per Conversion, Revenue per Click
- Aggregated daily metrics for easier analysis

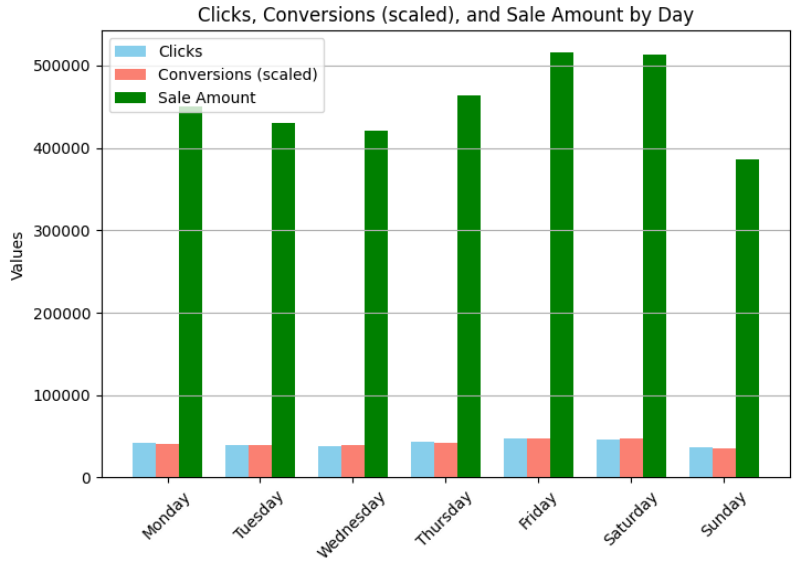
Daily Trends

- Friday and Saturday drive the highest clicks and conversions.
- Wednesday shows the strongest conversion rate, despite fewer clicks than peak days.
- Saturday achieves the highest ROAS, indicating more efficient returns on ad spend.
- Sunday underperforms across all metrics, with low clicks, conversions, and the weakest ROAS.



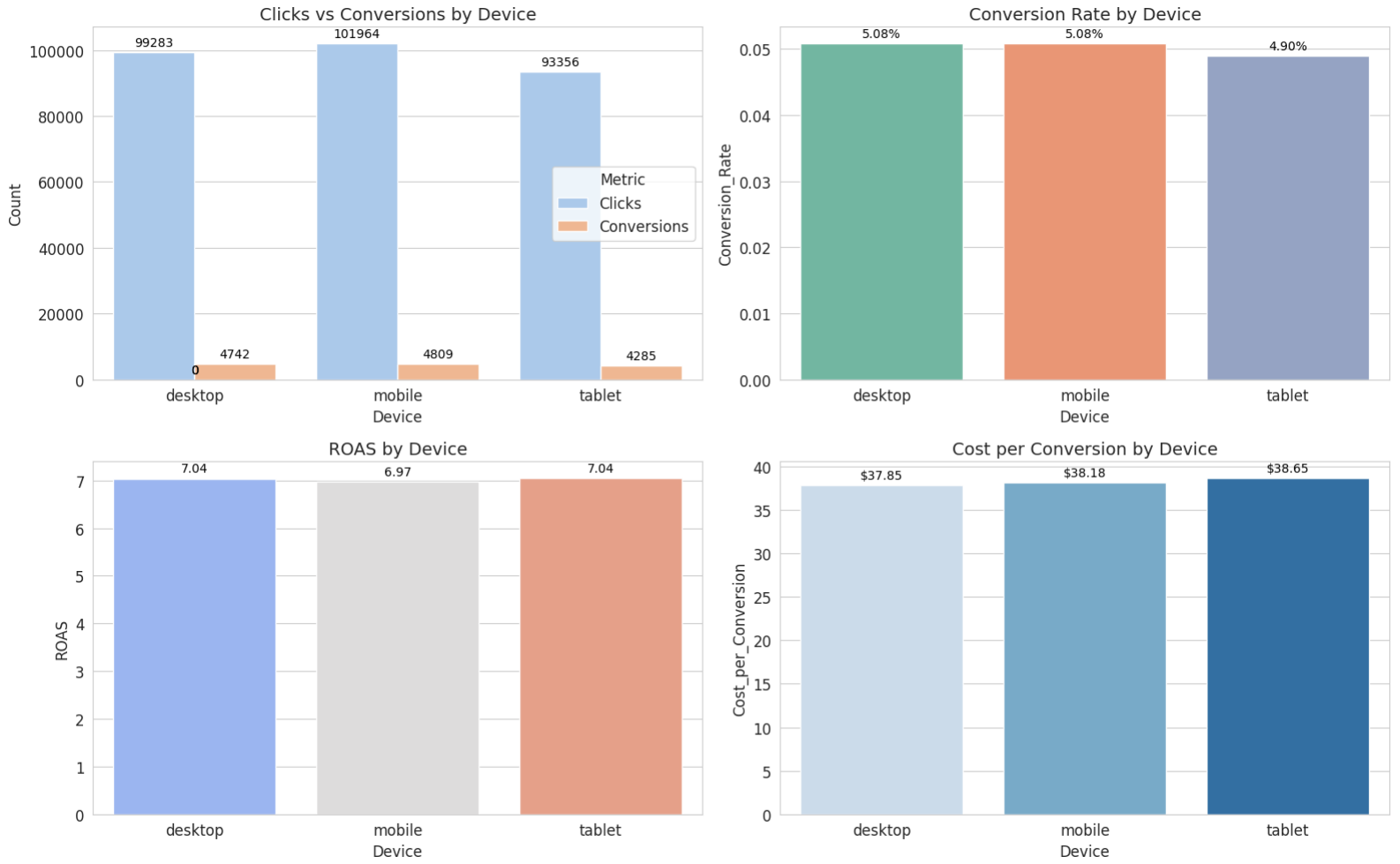






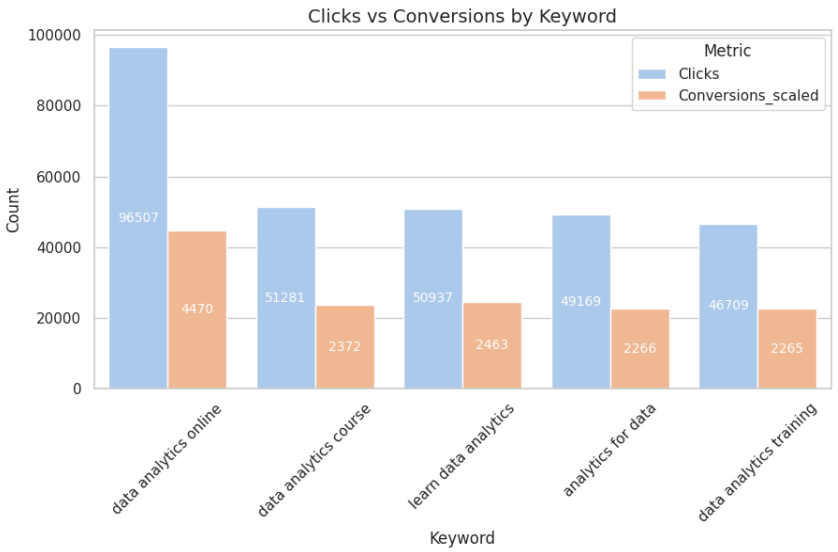
Devices

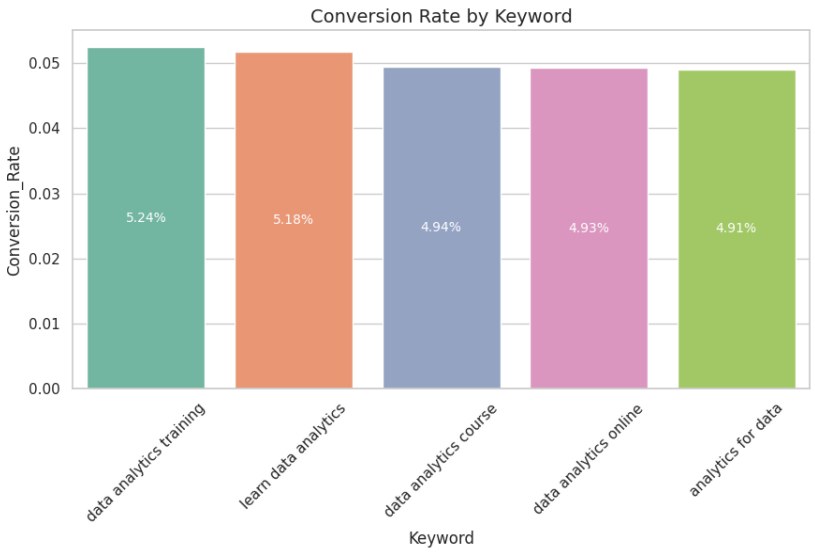
- Tablets have fewer clicks and conversions but deliver ROAS on par with desktops and exceeding mobile.
- Device type shows minimal impact on overall performance, indicating consistent efficiency across platforms.

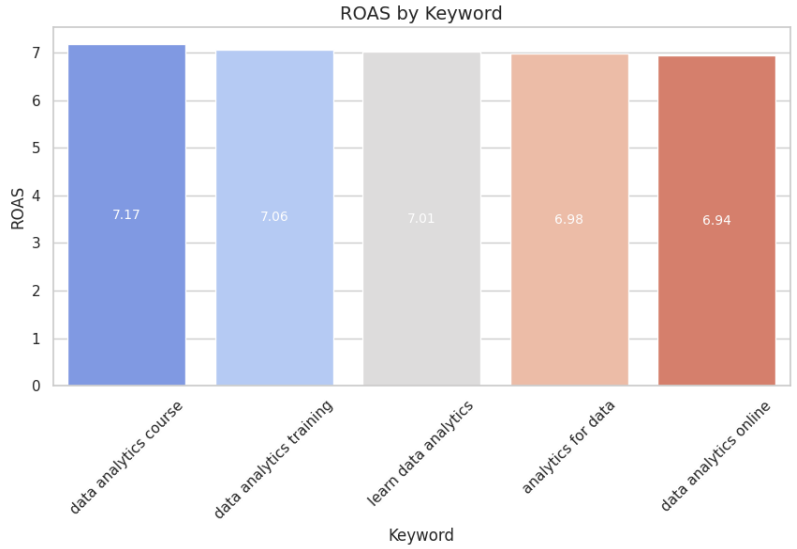


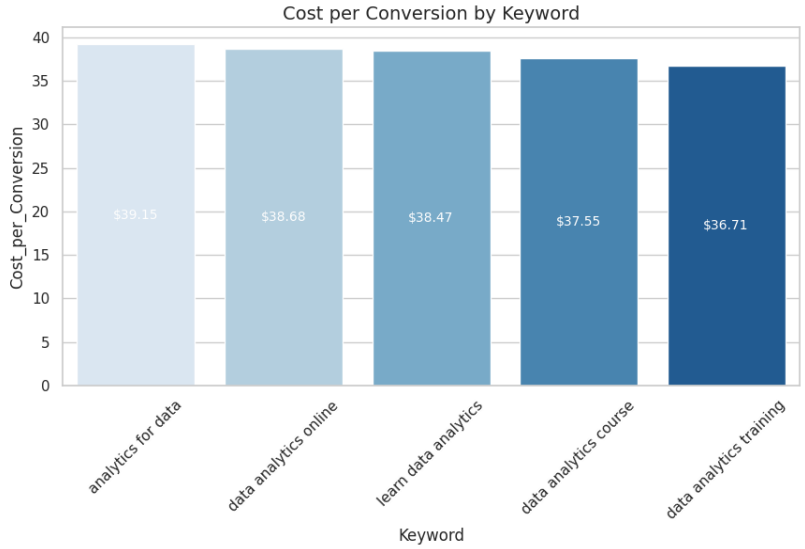
Keywords

- “Data analytics online” drives the most clicks and conversions, but has the lowest ROAS.
- “Data analytics course” achieves the highest ROAS despite fewer conversions.
- “Data analytics training” has the best cost per conversion and a strong ROAS.
- Despite differences in clicks and ROAS, conversion rates remain fairly consistent across keywords (~4.9–5.2%), indicating similar efficiency in turning visitors into leads.









Key Takeaways

- Allocate more budget to Saturday campaigns to maximize ROAS while sustaining strong sales.
- Maintain Friday spend for volume, but refine targeting to improve return efficiency.
- Increase midweek investment on Wednesday, capitalizing on the high conversion rate.
- Limit or pause Sunday spend to reduce wasted budget on underperforming days.

Key Takeaways (cont.)

- Prioritize spend on “Data analytics course” and “Data analytics training”, which deliver the highest ROAS and lowest costs per conversion.
- Maintain a balanced budget on “Learn data analytics”, as it provides solid ROAS with moderate conversion volume.
- Reduce reliance on “Data analytics online”, which generates the most traffic but underperforms in efficiency and ROAS.
- Reallocate spend from high-cost, low-return keywords to top-performing ones to maximize ROAS while sustaining strong conversion volume.

Recommendations

- **Reallocate budget by day:** Increase Saturday and Wednesday spend; maintain Friday for volume; limit Sunday to reduce inefficiency.
- **Refine keyword strategy:** Prioritize “Data analytics course” and “Data analytics training”; maintain balanced spend on “Learn data analytics”; reduce investment in “Data analytics online.”
- **Optimize efficiency:** Focus on keywords and days that deliver both high ROAS and manageable costs per conversion.
- Continuously monitor and adjust campaigns to confirm results and uncover additional opportunities for higher ROAS.

Conclusion

Our analysis shows that campaign performance can be significantly improved by reallocating spend toward the highest-return days and keywords, while reducing investment in underperforming segments.

By focusing on Saturday, Wednesday, and top-performing keywords ("Data analytics course" and "Data analytics training"), the company can maximize ROAS, sustain conversion volume, and reduce wasted budget.

Overall, this strategy provides a data-driven roadmap for smarter ad spend that balances growth with efficiency.

Appendix: Additional Links

- Google Colab Notebook
- Data Journal
- Github

Appendix: Calculated Metrics

To support deeper analysis, the following fields were derived from raw dataset values:

- Conversion Rate (CR)
  = Conversions ÷ Clicks
  Measures efficiency of turning clicks into sales

- Cost per Conversion (CPC)
  = Total Cost ÷ Conversions
  Indicates average spend required per sale

- Revenue per Click (RPC)
  = Total Revenue ÷ Clicks
  Highlights monetary return per engagement

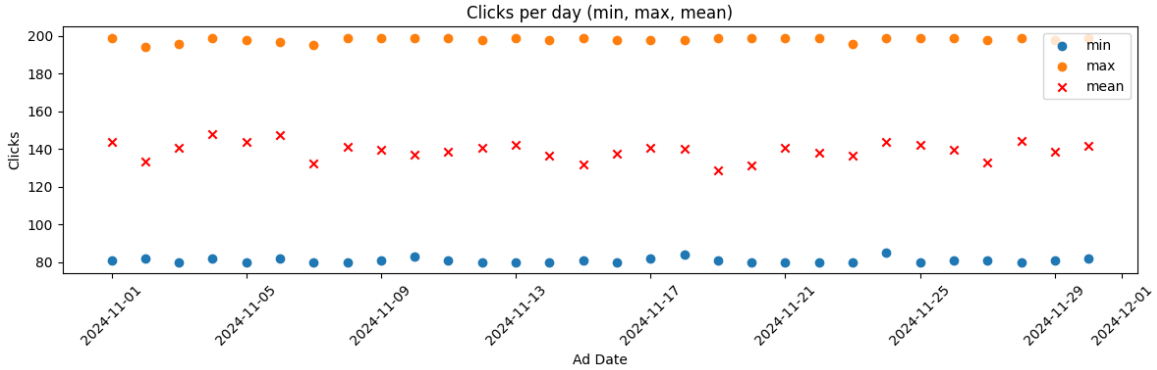
- Return on Ad Spend (ROAS)
  = Revenue ÷ Cost
  Primary metric for campaign profitability

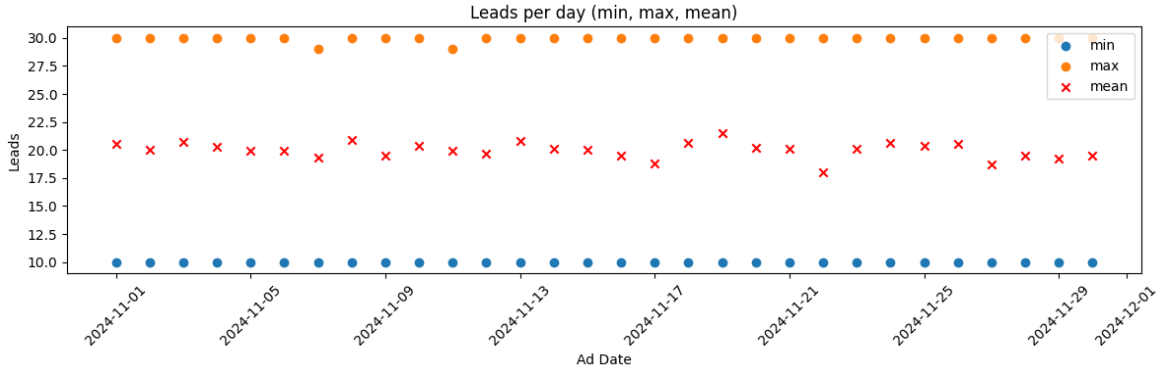
Appendix: Data Exclusion

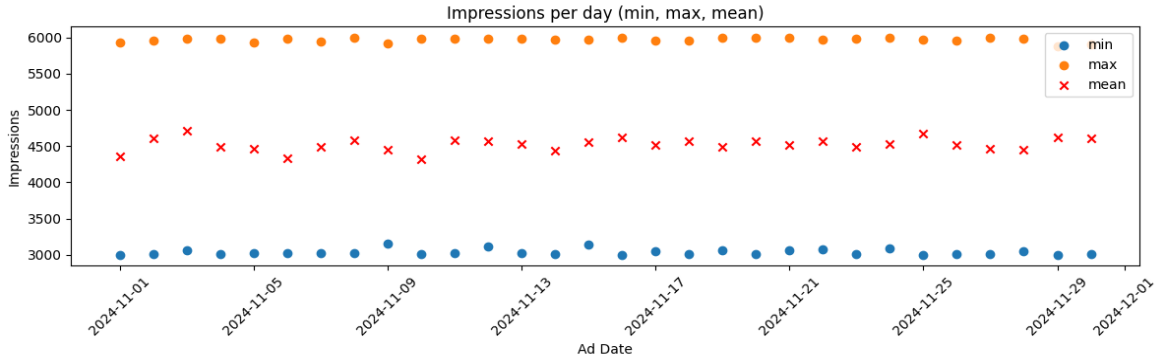
Why Missing Rows Were Excluded

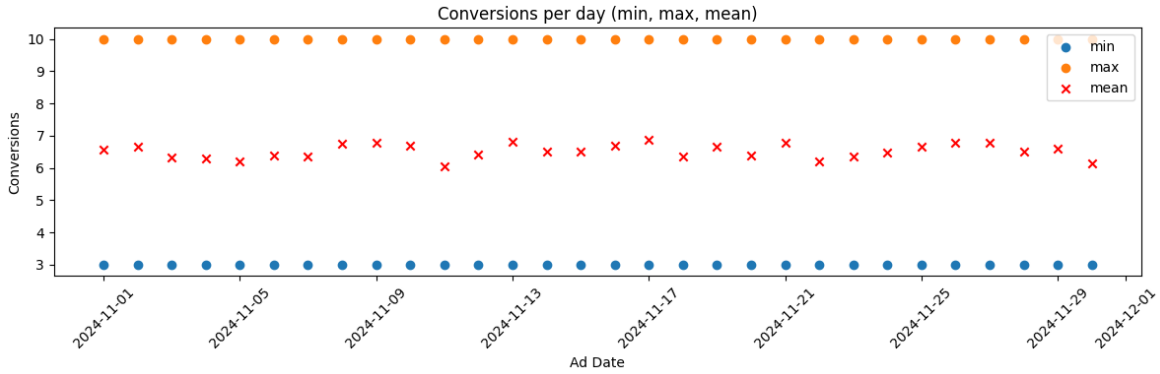
- Daily metrics vary significantly; using a mean or median would hide real performance differences.
- Imputing values could skew key results, like conversion rate and ROAS.
- Excluding rows ensures the analysis reflects true trends in clicks, conversions, and sales.

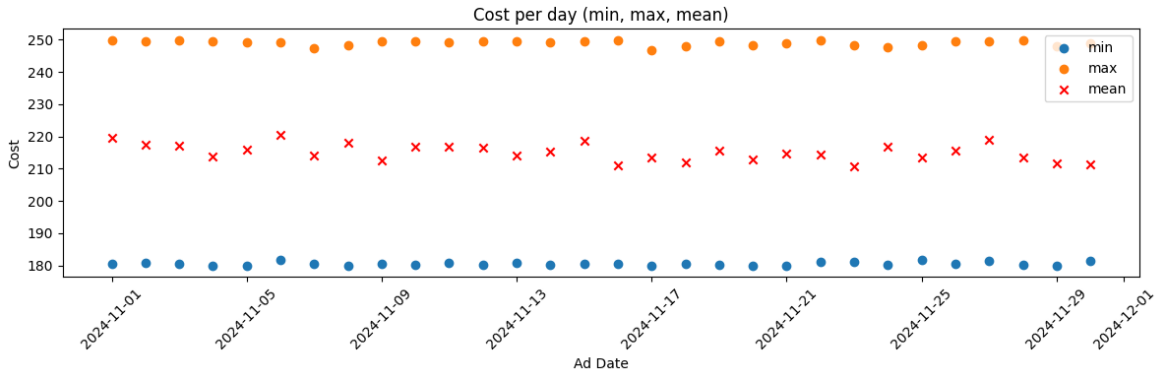
Appendix: Data Exclusion

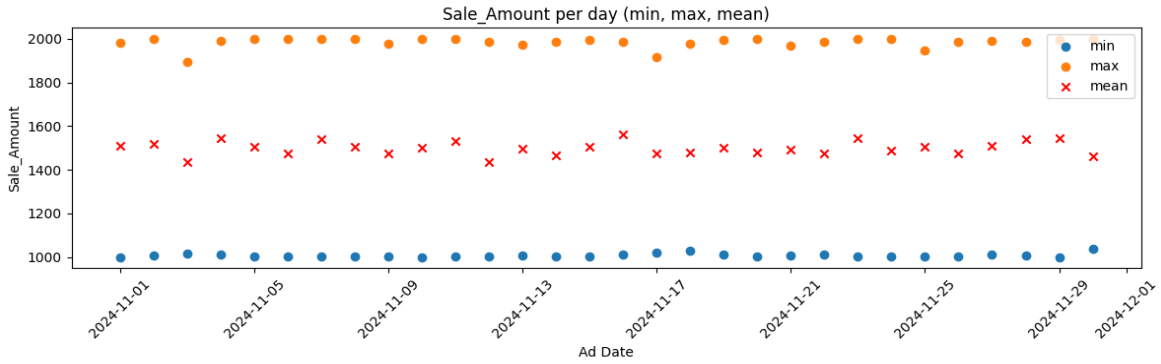












Appendix: Data Cleaning

- Checked for null values in critical fields (Clicks, Conversions, Cost, Sale Amount).
- Standardized text fields (Campaign Name, Device, Keyword, Location) for consistency.
- Created calculated metrics (Cost per Conversion, Revenue per Click, ROAS, Conversion Rate).
- Aggregated daily metrics to simplify analysis of trends.

Appendix: Additional Charts