

# Marketing Mix Model with Google LightweightMMM

# Marketing in a data-driven world

- ➔ Digital marketing boom in the last 15 years. Marketing efforts became easier to track.
- ➔ Growing concern about data protection in the last years. First steps: GDPR (2018), Apple Mail Privacy Protection (2021), Ad-blockers, data-privacy browsers (Brave)...
- ➔ Tracking marketing efforts will become more challenging.



# What is Marketing Mix Model (MMM)?



Quantitative analysis of historical data to estimate the effectiveness of a company's marketing strategy.



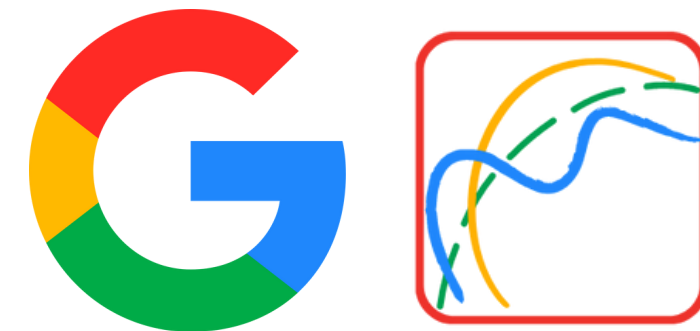
The goal is to make more informed decisions about where to invest the marketing budget.



Many small business don't have enough resources to have their own MMM.

# Google Lightweight MMM

- Python library that helps organisations understand and optimise marketing spending across media channels.
- A developer's team of Google is building it for the last year. It's still in an early stage.
- Model based on a Bayesian approach. It takes into account saturation of media, Adstock and seasonality.
- Alternatives, Robyn developed by Meta,



# Dataset

- A company that sells and advertises its products on Amazon, eBay and Walmart.
- Timeframe: 17.11.2021 to 11.01.2022
- Advertisement campaigns running in the mentioned marketplaces.
- Source: Kaggle

Lieferung bis **Montag, 19. Dezember**  
GRATIS Versand durch Amazon  
**Wird vor Weihnachten geliefert.**

Anzeige

# About the model:

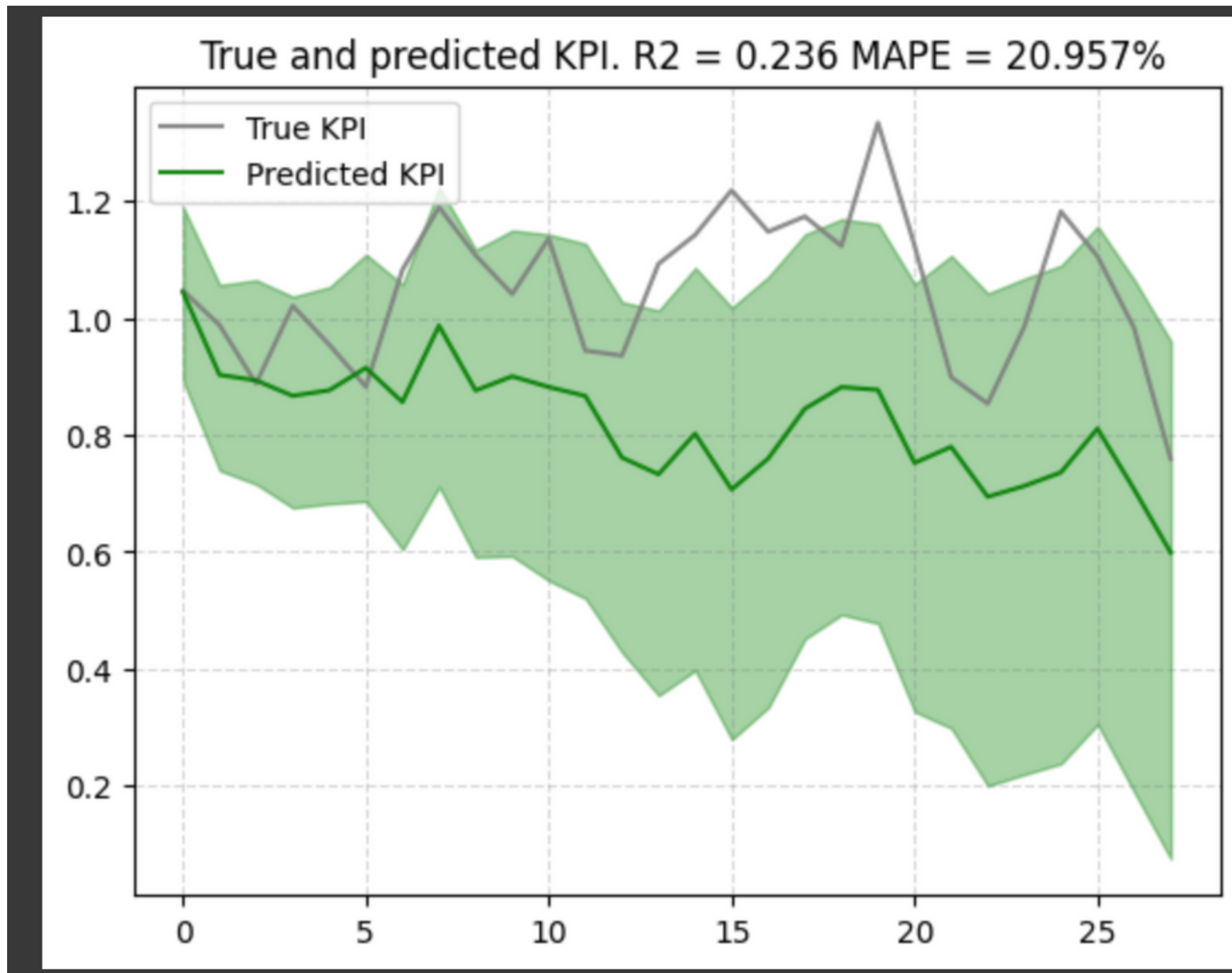
→  $kpi = \alpha + trend + seasonality + media\ channels + other\ factors$

→ 3 options for media saturation and lagging effect. "Adstock" approach.

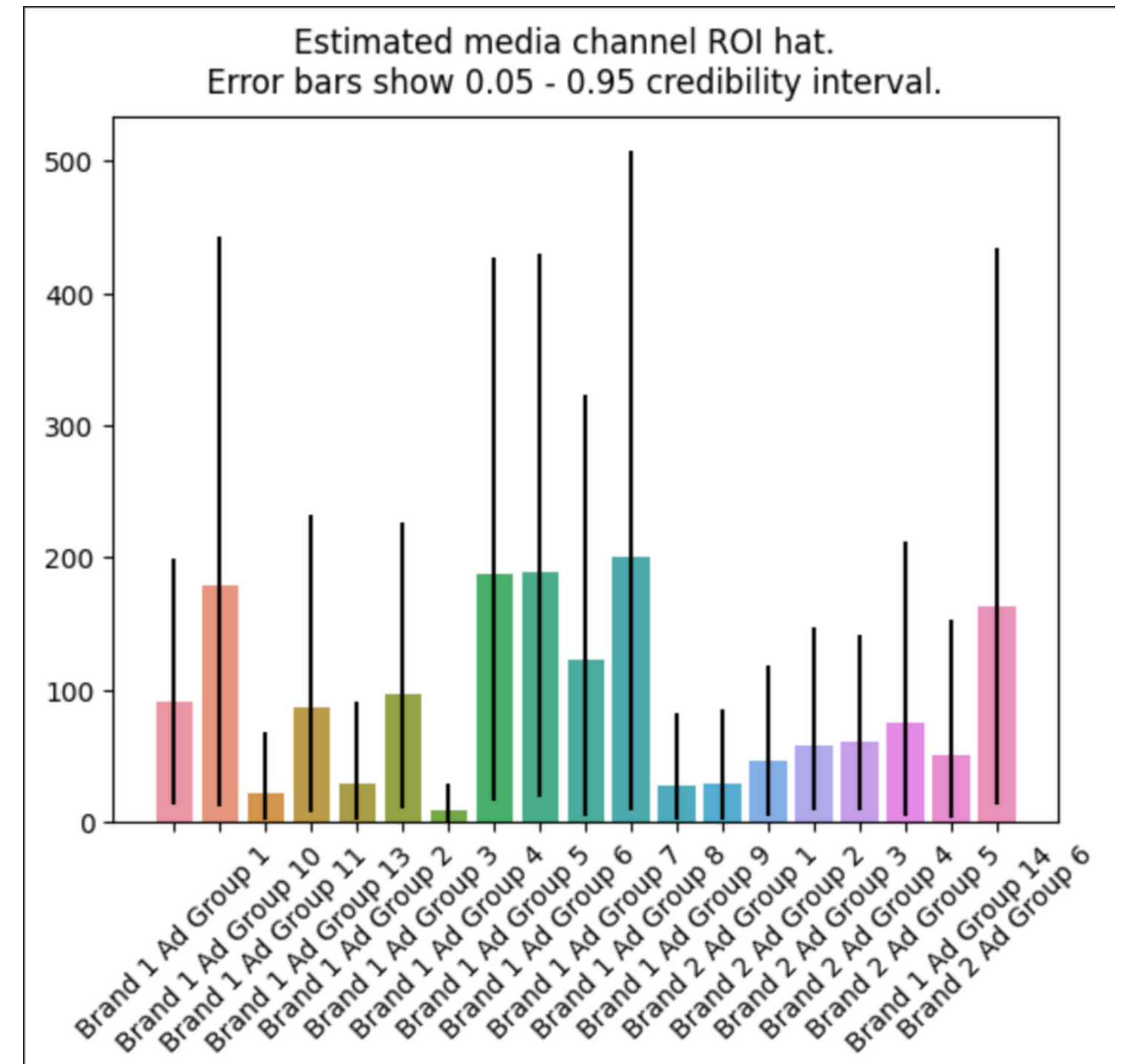
→ Seasonality: weekday effect.



# Sales: True vs Predicted

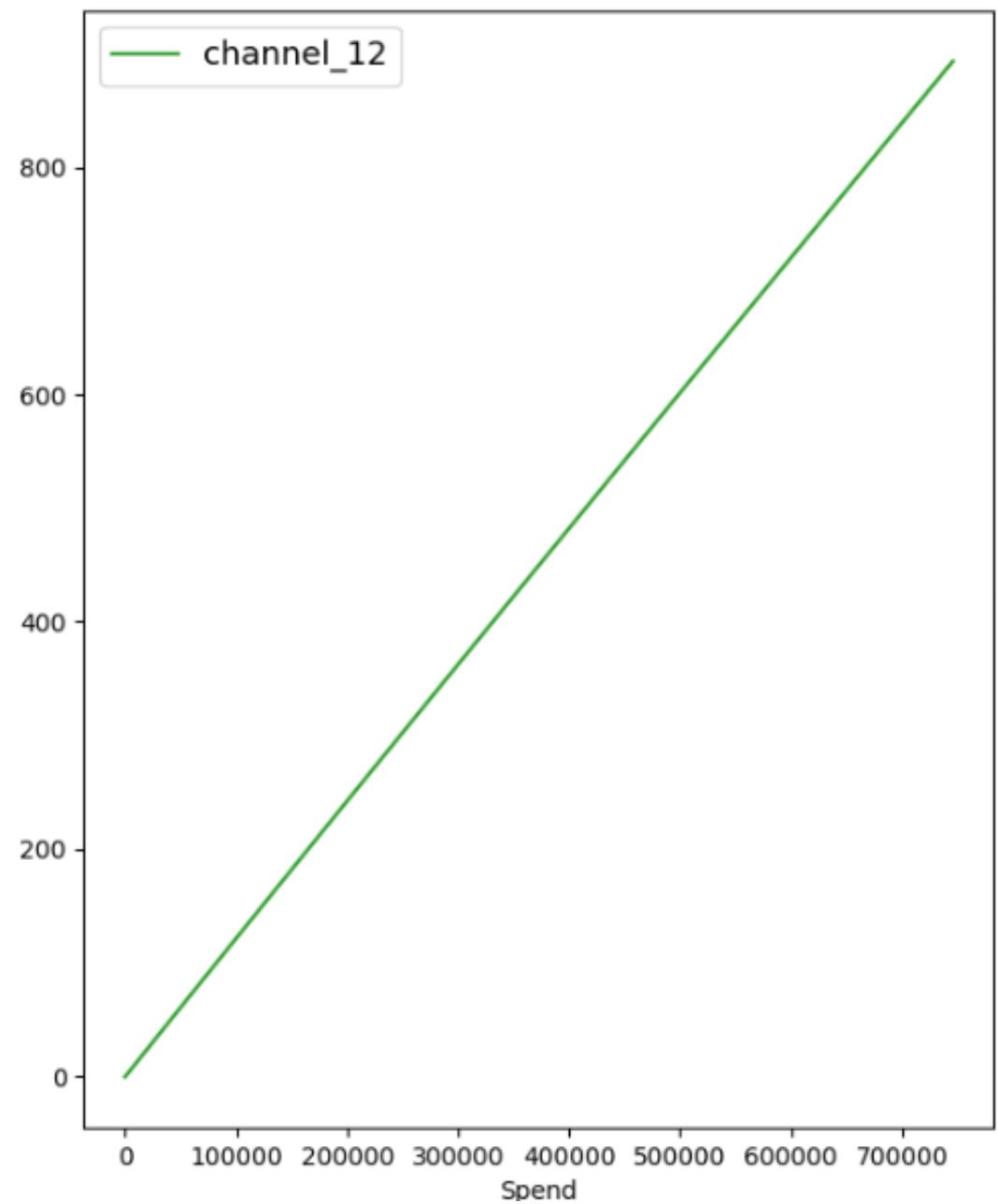
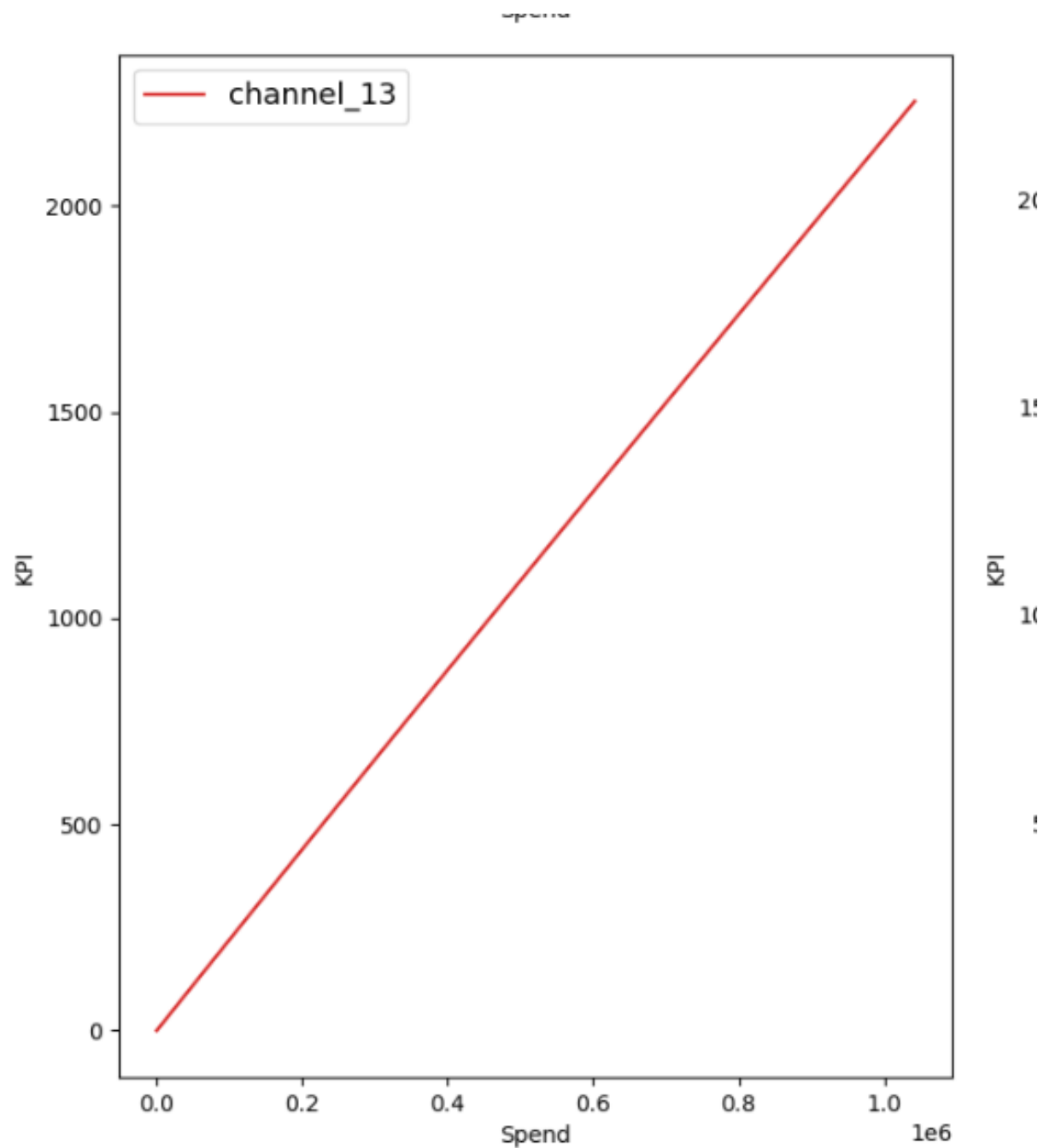


# ROI per campaign





# Response curves



# Budget optimizer

```
Brand 1 Ad Group 1 : 1.17 %
Brand 1 Ad Group 10 : 0.83 %
Brand 1 Ad Group 11 : 0.0 %
Brand 1 Ad Group 13 : 4.68 %
Brand 1 Ad Group 2 : 0.25 %
Brand 1 Ad Group 3 : 0.03 %
Brand 1 Ad Group 4 : 32.85 %
Brand 1 Ad Group 5 : 3.37 %
Brand 1 Ad Group 6 : 0.07 %
Brand 1 Ad Group 7 : 0.0 %
Brand 1 Ad Group 8 : 12.889999 %
Brand 1 Ad Group 9 : 0.049999997 %
Brand 2 Ad Group 1 : 0.0 %
Brand 2 Ad Group 2 : 36.649998 %
Brand 2 Ad Group 3 : 0.049999997 %
Brand 2 Ad Group 4 : 0.0 %
Brand 2 Ad Group 5 : 1.3299999 %
Brand 1 Ad Group 14 : 2.09 %
Brand 2 Ad Group 6 : 3.6799998 %
```

