MEDICAL CONFERENCE

Key Metrics

- **Measure ROI:** Compare pre- and post-event prescription volumes to assess the impact on sales.
- **Foot traffic:** Number of attendees passing/stopping at booth.
- **Engagement:** Short/long talks, materials shared, interest in follow-ups
- **Profiles:** New vs. existing physicians, geography, ranking.
- **Feedback:** Drug perception, obstacles in prescription.

Actions Before the Event

- **Define goals:** Target new/existing physicians.
- **Invite Top Physicians:** Send emails promoting exclusive insights and demos.
- **Highlight Incentives:** Offer perks like research access, free samples, or networking opportunities.

Actions During the Event

- **Capture Data:** Track interactions, distribute materials.
- **Engage Actively:** Address obstacles, highlight drug benefits.
- **Use Tech Tools:** QR codes, badge scanners for quick data capture.

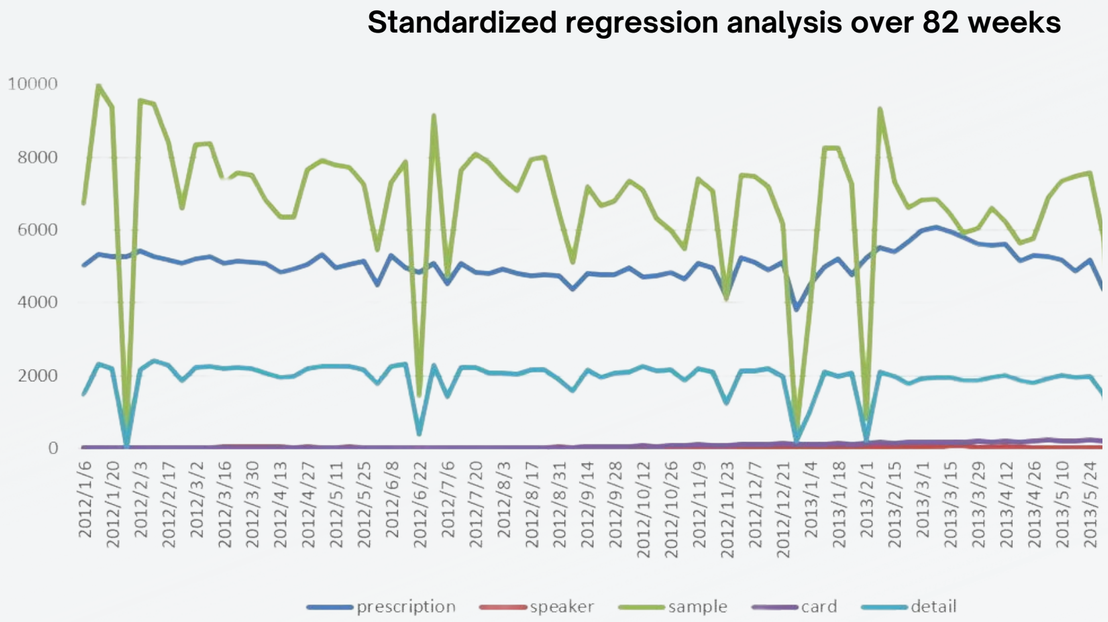
Actions After the Event

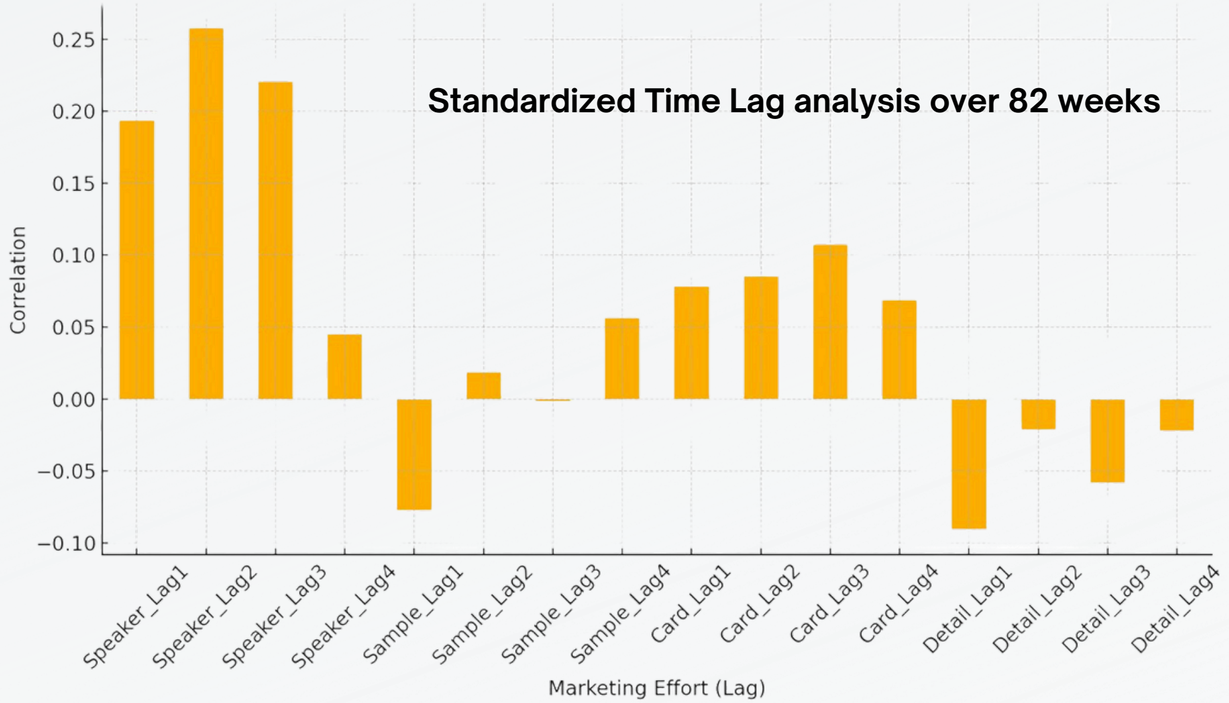
- **Analyze data:** Lead Conversion Rate, Prescription Lift, Cost per Lead (event cost / number of leads generated).
- **Follow up:** Personalized outreach to interested physicians.
- **Assess impact:** Prescription lift, regional performance.
- **Refine strategy:** Tailor messaging for future events.

EXECUTIVE SUMMARY

- **Loyalty Cards** had the **highest lift** in 2013, while Speakers showed a decline in effectiveness from 2012 to 2013. Investment strategies should be re-evaluated based on their regional popularity and decile rankings.
- **Sampling** has the second-highest normalized correlation with sales (coefficient: 0.14), but it is not necessarily the cause of high prescription rates. Be mindful of the variability in sample effectiveness results due to their high frequency.
- Promotional campaigns, except for sampling, typically experience a **time lag** between implementation and observable impact. Planning 4 weeks ahead is the golden rule for Loyalty Cards and Details to achieve optimal results.
- The **Northeast** and **Central** regions are the most profitable areas for investment. In contrast, the South has effective but underutilized speaker programs. Patients in the Northeast are particularly receptive to **speaker programs** and **sample distribution**.
- **High-ranking physicians** (Decile 10) are the most receptive and should receive the majority of our resources.
- **Prioritize Clusters 2 and 3,** as they represent the real action zones. Scale back on Clusters 0 and 1—they're just not as engaged.

ANALYSIS RESULTS





REGRESSION

- We conducted a standardized **regression** analysis of promotions and prescriptions over 82 weeks.
- **Speaker** (coefficient: 11.26) should be our primary strategy, with **Card** (1.25) and **Sample** (0.14) serving as supplementary methods.
- The **Detail** strategy (Coefficient: -0.37) should be reevaluated or optimized due to its negative impact.

LAG

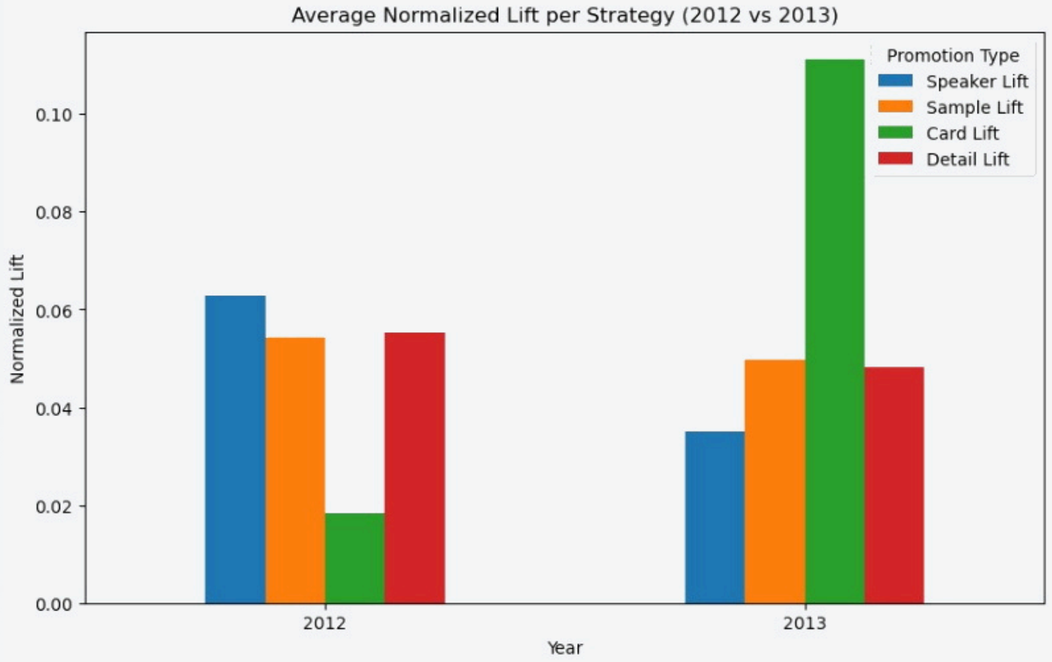
Regression analysis suggests the possibility of lag effects for promotions.

- **Sampling:** Immediate impact on prescriptions with no lag effect.
- **Recommendation:** Sampling should be prioritized.
- **Speaker & Card:** Both show significant lag effects.
- **Recommendation:** Schedule these promotions strategically, 4 weeks ahead of key sales goals.
- **Detailing:** Limited impact observed across all lag periods.

ANALYSIS RESULTS

LIFT ANALYSIS

	Year	Speaker Lift	Sample Lift	Card Lift	Detail Lift
0	2012	0.062811	0.054386	0.018440	0.055233
1	2013	0.035181	0.049624	0.111246	0.048172

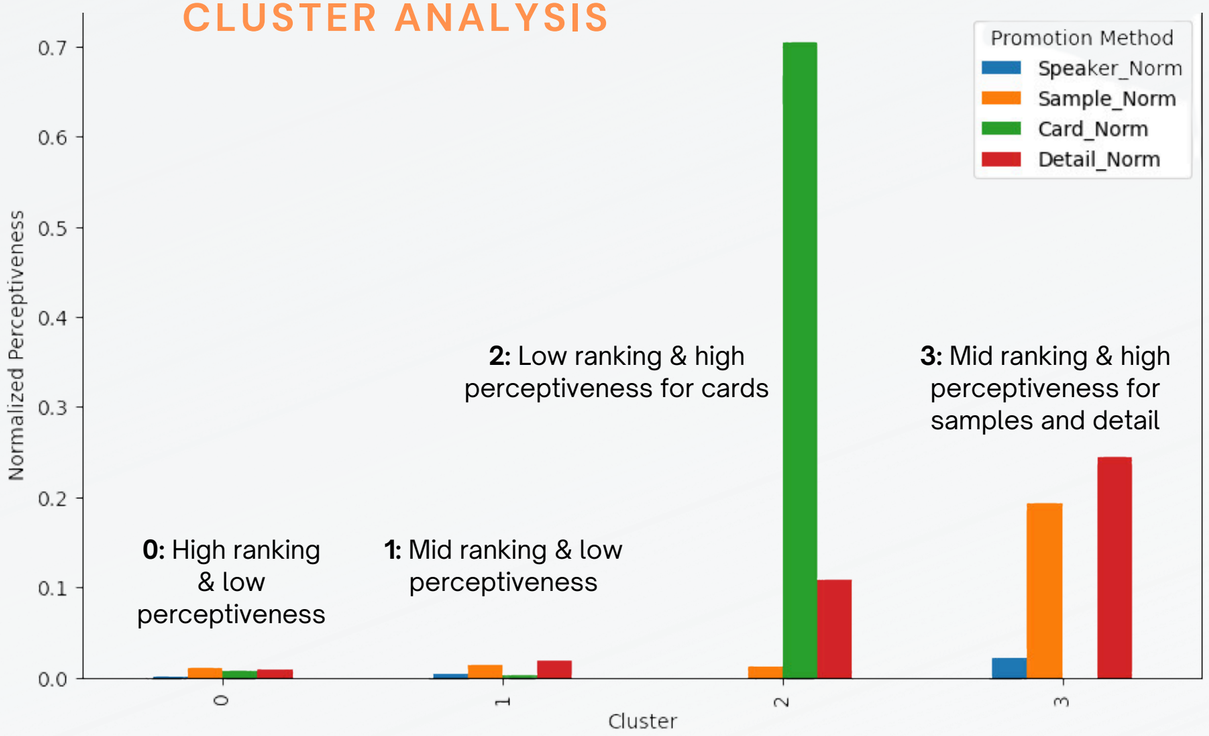


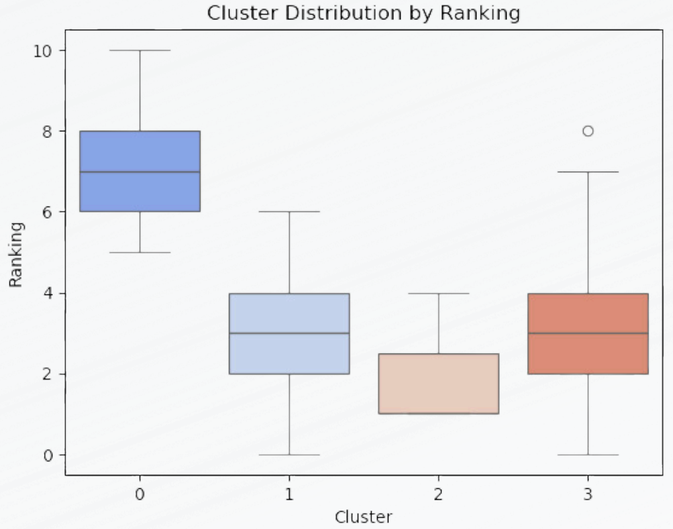
- **Speaker Lift: Highest in 2012** at 0.06. indicating for every speaker program event in 2012, the prescriptions increased by 6% (relative to the baseline).
- **Card Lift**: Is the **highest in 2013** at 0.11

Recommendations

- **Increase investment in Cards**: Showed the most improvement from 2012 to 2013 and has the highest lift in 2013.
- **Maintain Sample & Detail Promotions**: Provide consistent lift across both years.
- **Reevaluate Speaker Programs**: Declining effectiveness,may need a strategic overhaul or reduced focus.

CLUSTER ANALYSIS





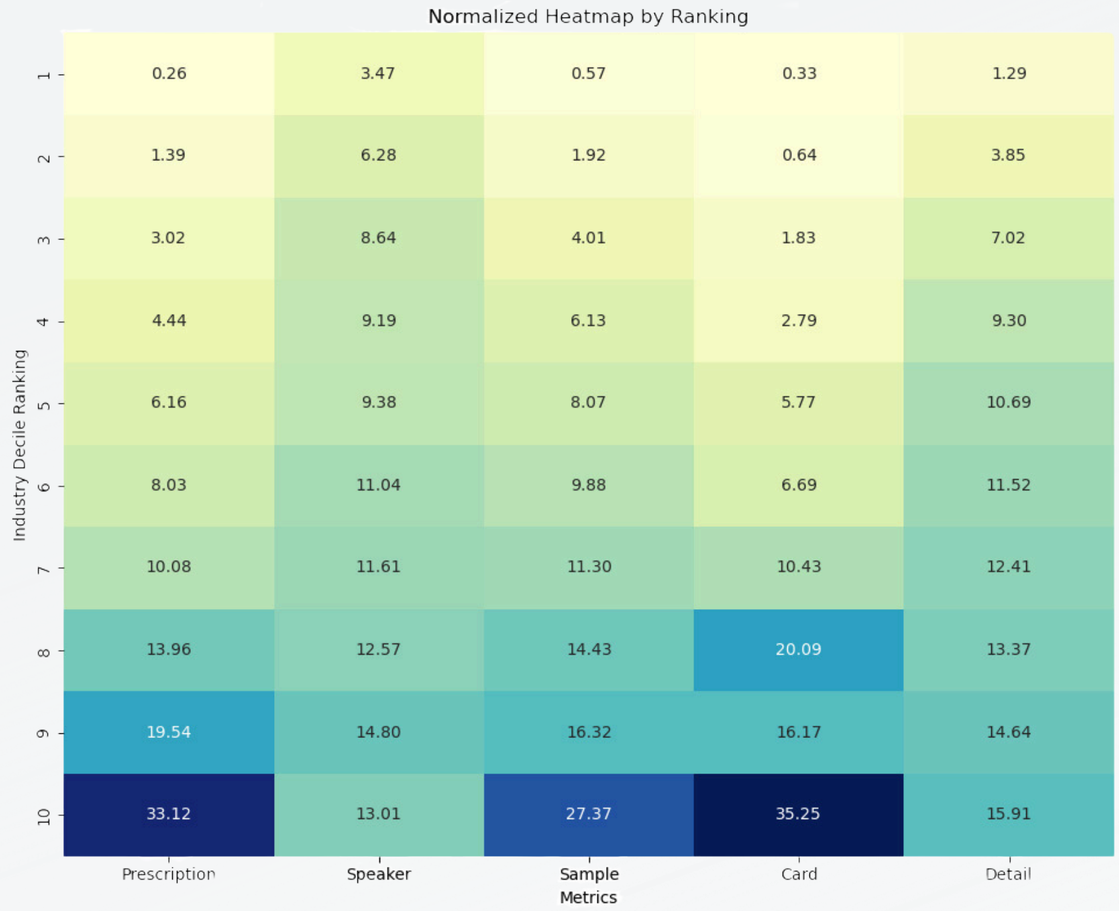
Recommendations:

- Target Cluster 2 with cards
- Prioritize samples and detail for Cluster 3
- Limit effort for Clusters 0 & 1

Perceptiveness = promotion/prescription

ANALYSIS RESULTS

IMPACT OF MARKETING STRATEGIES ACROSS RANKINGS



MOST POPULAR AREA FOR EACH PROMOTION

- **Focus on high decile rankings as maximum prescriptions are concentrated here- people are receptive to high rankings**
- There is potential for expanding speaker programs in higher deciles because speaker rankings are consistent across metrics

- Increase marketing efforts in the **Northeast** and **Central** regions as they are close runners-up to the South in prescription yield and could improve further with additional resources.
- Puerto Rico is the most popular (sample size is only three)

METHODOLOGY

Regression

Multi-Factor Regression:

- *Normalized* the data by physician before conducting the analysis.
- Calculated the relative and absolute effectiveness of each promotional method against the number of *prescriptions*.

Time Series Analysis:

- Aggregated the data by time to measure the *lag* effects of each promotional method.

K-Means

- **Aggregated** data by physician.
- Defined **perceptiveness** as marketing tactic/prescriptions and ranked physicians accordingly.
- Determined the **optimal number of groups** (4) using the elbow method.
- Identified the **characteristics** of each group.
- Observed no clear geographical distribution **pattern**.

Heat Map Analysis

- **Data Standardization:** Normalized data by dividing each value by the column sum and scaling to 100% for comparability.
- **Heat Map Generation:** Visualized metric distributions across geographies and rankings using separate heat maps.
- **Comparative Analysis:** Analyzed patterns and distributions to identify focus areas.

Lift Analysis

- **Total Lift Calculation :** Determined the increase in prescriptions attributed to each promotion compared to baseline sales.
- **Normalized by Instances:** Divide the total lift by the number of instances of each promotion.
- **Adjust by Baseline:** Normalized the result by the baseline prescriptions to standardize across strategies.

Future Improvement:

- Incorporate causal inference techniques, such as **A/B testing**, for more robust insights.

Future Improvement:

- Incorporating **geographical** data for deeper insights.
- Separating **prescription** and **promotion** inputs for more accurate clustering.

Future Improvement:

- **Horizontal Standardization:** Normalize rows to compare regions or rankings directly for each metric.
- **Granular Metrics:** Separate prescriptions and promotions for deeper insights.

Future Improvement:

- The lift analysis for 2013 includes only 6 months of data. The results would be more comparable if data for the entire year were available.

AI USAGE

This presentation involved the use of **ChatGPT O1 and 4O** models for the following purposes:

- **Normalizing** data and removing abnormal variations to prevent skewed results.
- Conducting **exploratory analysis** to understand variables and patterns within the data.
- **Identifying** potential concepts for Data-Driven Marketing applications.
- Gaining insights into the relationship between **regression** analysis and **lift** analysis.
- Generating and implementing the **k-means algorithm** to create clusters for segmentation.
- **Proofreading** and refining the final text for grammatical accuracy.

All outputs generated through AI were thoroughly reviewed and validated by the team to ensure accuracy and alignment with the project objectives.