

Data Analysis for Marketing

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Data Exploration and Understanding

Data Exploration and Understanding

- In this stage, we delve into the dataset to grasp the meaning of each column.
- Descriptive statistics of each column, such as mean, min, max, and percentiles, are calculated. To see how data is distributed.
- Visualizations are employed to uncover data distributions and to understand better each variable.

Data Cleaning

- We delete all the duplicated, we look for NAN, and find Outliers that could potentially affect our data.

Key Performance Indicators (KPIs)

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- Identify relevant KPIs aligned with campaign objectives.
- Quantitatively measure the impact of the campaign.
- Make Graphs using this KPIS and find the apropiate way of showing the graph.

KPI Creation

- Create a KPI, Click-Through Rate (CTR), a widely used marketing metric.
- This KPI measures Engagement, it indicates whether your audience is interested enough to take action (or to do click in the ad).

$$\text{CTR} = \left(\frac{\text{Number of Clicks}}{\text{Number of Impressions}} \right) \times 100$$

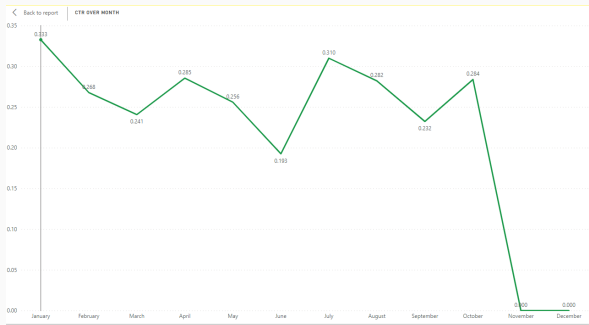
- Average Session Time:
- Pages View per Session
- Avg. Session Time / Pages View per Session: This ratio measures the time users spend on your website relative to the number of pages they view in a single session. Higher values indicate both quantity (viewing multiple pages) and quality (spending more time) of user engagement.

Data Visualization

- Select appropriate graphs to represent the data effectively.
- Emphasize visualization techniques that highlight critical insights for this dataset and campaign.

Data Analysis

CRT Over Months (Part 1)



- January had the highest CTR among the months mentioned (0.33).
- Successful marketing efforts in January led to high user engagement.

CRT Over Months (Part 1)

- June had the lowest CTR among the months mentioned (0.193).
- A drop in CTR indicates challenges or reduced engagement during that month.

Distributions of Clicks and Impressions

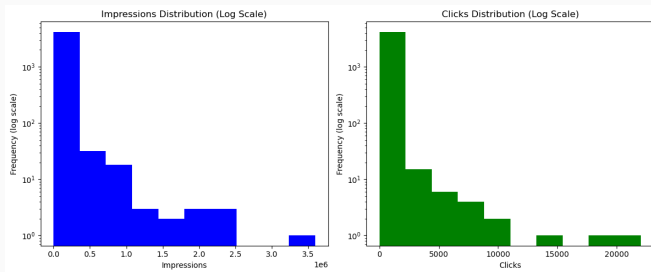


Figure 1: Variable distributions

- We see that half of our values are between 0 and 0.5, so our values are really low, this could indicate our kpi value
- now well see this

Total Impressions and Clicks By Site

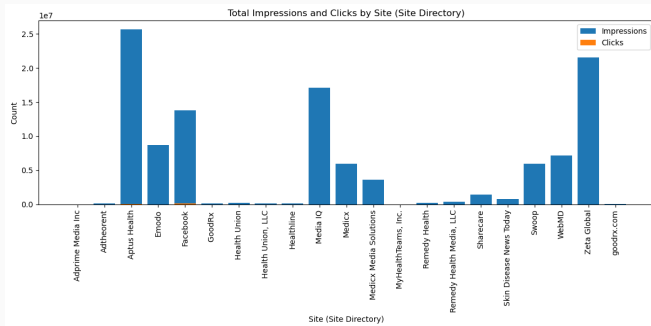


Figure 2: Total Impressions and Clicks By Site

- Here in this graph, we see the total impressions by site, which can give us an idea of how the campaign is performing.
- and the money of each campaign

CTR By Site

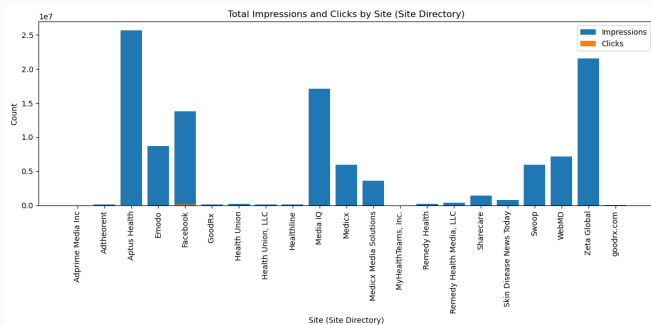


Figure 3: CTR By Site

- Here in this graph, we see the total impressions by site, which can give us an idea of how the campaign is performing.
- and the money of each campaign

Site and CTR

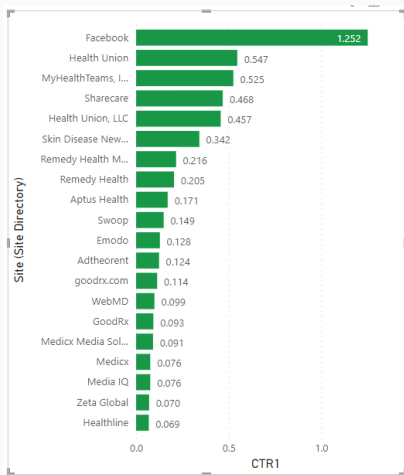


Figure 4: Site and CTR

- In this graph, we observe a compelling insight: Facebook leads in performance among the listed sites.
- While Aptus Health garners the most impressions, it's crucial to note that high impressions don't necessarily translate to better performance. This is evident in its CTR, which ranks relatively low on the list.
- We are now evaluating the impact of these different sites to determine which ones are likely to deliver the best results.

Site and CTR Over Dimensions

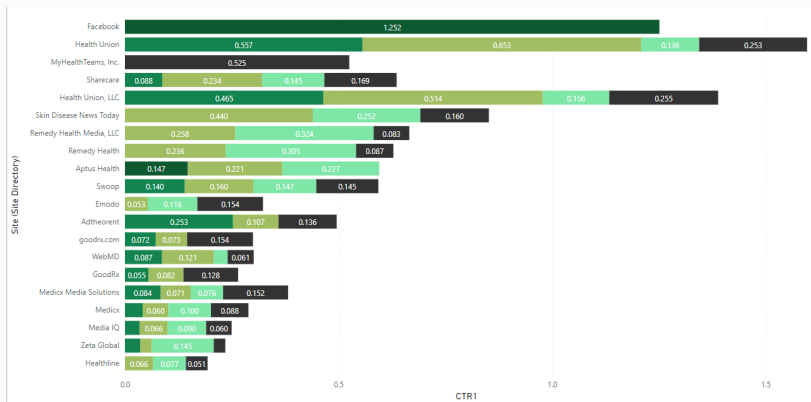


Figure 5: Site and CTR Group By Dimensions

Site and CTR Over Dimensions

- Within this graph, we glean valuable insights regarding which dimensions yield the best results across different sources.
- Notably, in this example, the 1x1 dimension stands out as a top performer. However, it's worth noting that the majority of 1x1 dimensions are associated with Facebook. On the other hand, in alternative dimensions, a value of 0.134 emerges as the data's superior performer of the dimension 300x50.

Platform Type

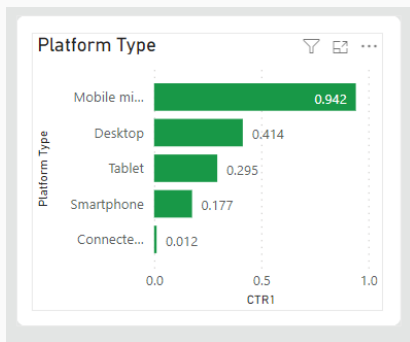
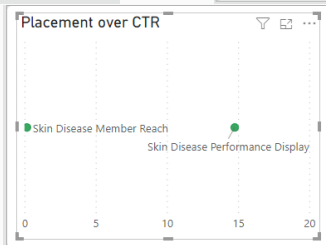
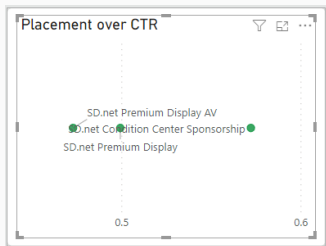
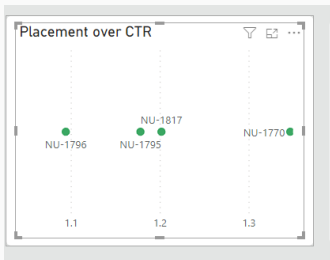


Figure 6: Platform Type

- In this graph, Mobile appears to outperform other platforms. However, it's important to note that we have limited data points, only 104, for this category.

- The key insight here is that while we predominantly target smartphones, Desktop, with significantly more data, exhibits nearly double the performance. This suggests the potential for reallocating resources to Desktop campaigns.

Placement Over the 3 main Sites(Facebook,Health Union,Share Care)



Placement Over the 3 main Sites

- Within this graph, we can discern the effectiveness of ad placements by evaluating the Click-Through Rate (CTR). Notably, NU-1770 stands out as the most effective placement(Facebook), suggesting a promising avenue to explore. Additionally, Health Union's SD.net premium Display and ShareCare's skin disease performance Display also exhibit strong CTR performance, making them attractive options to consider.

Second Database

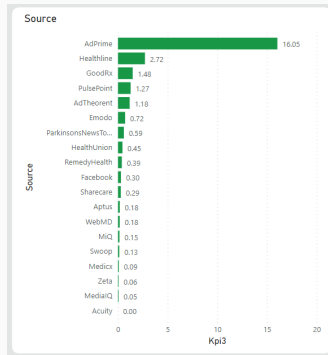


Figure 7: AVG.Session/Pages Views

- In this image, we measure not only quantity (multiple pages viewed) but also quality (time spent on the website). AdPrime, Healthline, and Goodrx stand out. Notably, AdPrime, with only 2771 rows out of 136k, presents intriguing data, making it a worthy candidate for further exploration.
- On the other hand, Facebook boasts a notable value of 0.30. This metric represents the average time users spend per session in minutes. Despite its high engagement level, Facebook's 0.30 minutes per session is among the highest, even when compared to significant sources like Aptus.

Source vs Pages views per Session

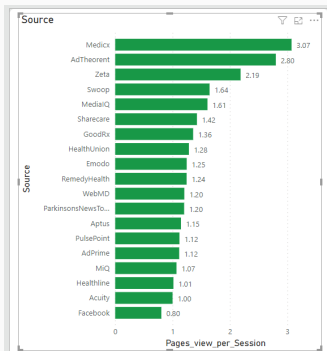


Figure 8: Source vs Pages views per session

Source vs Pages views per Session

- In this graph, "Medics" stands out with the highest value, averaging three pages per session, which is on par with "Theorent" and "Zeta." Notably, "Zeta" is particularly noteworthy as it boasts ten times the representation.
- This observation aligns with the common understanding that when users view more pages during a single visit, it indicates a deeper level of engagement and interaction with the website's content.

Source and Average session Time

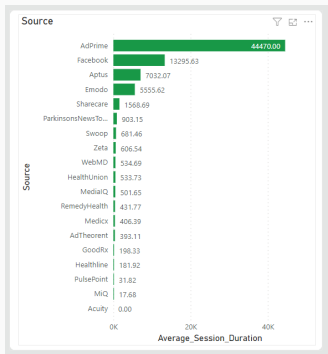
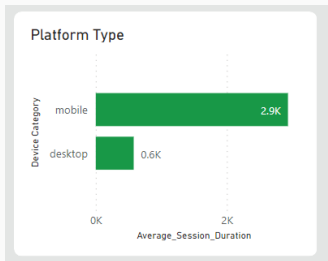


Figure 9: Source and Average session Time

Source and Average session Time

- In this graph, AdPrime, Facebook, and Aptus exhibit the highest average session times.
- Average Session Time: This metric provides insights into user engagement with your content. Higher average session times typically suggest more substantial user interaction and a deeper level of engagement.
- This indicates that Facebook and Aptus, being among the largest sources in our database, are making a significant impact by engaging users.

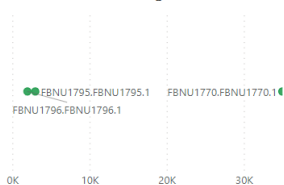
Platform Type over AVG.Session



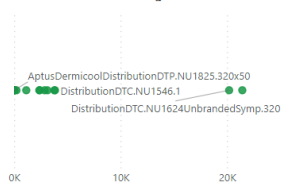
- The majority of our data (100K entries) is from mobile devices, with only 16K entries from desktops. In this graph, we observe that the average ad duration on mobile devices surpasses that on desktops.
- This discrepancy suggests the potential for allocating more resources to mobile advertising.

Best Ads Facebook, Aptus, AdPrime

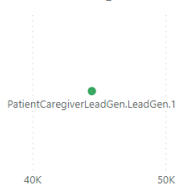
Ad Content over Average Session



Ad Content over Average Session



Ad Content over Average Session



Best Ads Facebook,Aptus,AdPrime Page(2)

- In this analysis, an intriguing finding surfaces with Facebook's Ads, especially NU1770. What stands out is the remarkable consistency in this ad's performance across different datasets, suggesting a strong and reliable level of audience engagement. This consistent performance signals its potential for profitability in marketing campaigns.
- To harness this potential, we can strategically prioritize ads with increased engagement values, enhancing their content and reach to further maximize audience engagement.

Recomendation Database 2

Recommendations Database 2

- Consider increasing resource allocation to Facebook, Aptus, and AdPrime, which show signs of good advertisement performance.
- Keep tracking the mobile platform, which demonstrates better average session time.
- For ad content in both datasets, it was found that for Facebook, the best ad is Nu1770, which could improve the average session time on Facebook, making it more engaging for users.
- For Aptus and other sources, choose better ads based on average session time. Use more concise and engaging ad content to enhance user engagement.

What Additional Information Would You Need for Deeper Insights?

- **Campaign Budget Data:** Having access to the budget allocated for each campaign is crucial. Understanding how much was spent on advertising can help assess the efficiency of each campaign and calculate ROI.
- **Detailed Ad Metrics:** Gathering comprehensive ad performance metrics such as click-through rates (CTR), conversion rates, cost per click (CPC), and return on ad spend (ROAS) is essential. These metrics offer a more comprehensive view of ad effectiveness.
- **Ad Creative and Copy:** Examining the actual ad creative, design, and ad copy can provide insights into what elements are resonating with the audience and which need improvement.

What Additional Information Would You Need for Deeper Insights?Page(2)

- **Demographic Data:** Understanding the demographics of the audience (age, gender, location, interests) can help tailor ad campaigns more effectively.
- **Competitor Data:** Analyzing competitors' ad strategies, including their ad content and performance metrics, can offer valuable benchmarks.

What format would you use to report findings?

- Slides, Reports, Dashboards, etc.