

Email Campaign Performance Dashboard

Project Report by Vaibhav Sharma

Date: May 16th, 2025

Tools Used: Python, Pandas, Power BI, Excel

INDEX

Section	Page No.
1. Project Overview	3
2. Objective & Goals	4
3. Dataset Description	5
4. Analysis & Key KPIs	6
5. KPI Dashboard (Visual Section)	7-12
6. Conclusion & Recommendations	13
7. Next Steps	14

1. Project Overview

This project analyses simulated email marketing campaign data to uncover performance trends, optimize KPIs (Key Performance Indicators), and visualize results through an interactive dashboard. The goal is to derive actionable insights that can help marketing teams improve campaign effectiveness and drive higher engagement and revenue.

2. Objective & Goals

- Analysed the effectiveness of different email campaigns.
- Track and compare KPIs such as open rate, click rate, conversion rate, and revenue.
- Identify top-performing and underperforming campaigns.
- Provide actionable recommendations to improve future campaign results.

3. Dataset Description

The dataset consists of 500 simulated entries representing email campaign performance. Each row corresponds to an individual email instance.

Columns Included:

- **email_id**: Unique identifier for each email.
- **campaign_id**: Identifier of the campaign the email belongs to (e.g., CAMPAIGN_1 to CAMPAIGN_5).
- **send_date**: The date the email was sent.
- **open_rate**: The percentage of recipients who opened the email.
- **click_rate**: The percentage of opened emails where a link was clicked.
- **unsubscribes**: Number of recipients who unsubscribed.
- **conversion_rate**: Percentage of recipients who completed a desired action (purchase, sign-up, etc.).
- **revenue_generated**: Estimated revenue earned from the email.

[37]: df

[37]:	email_id	campaign_id	send_date	open_rate	click_rate	unsubscribes	conversion_rate	revenue_generated	revenue_per_email	click_to_open_ratio
0	E0001	CAMPAIGN_1	2024-01-01	0.34	0.20	2	0.13	109.23	109.23	0.59
1	E0002	CAMPAIGN_2	2024-01-02	0.17	0.14	0	0.17	141.73	141.73	0.82
2	E0003	CAMPAIGN_3	2024-01-03	0.34	0.13	4	0.15	68.03	68.03	0.38
3	E0004	CAMPAIGN_4	2024-01-04	0.59	0.19	3	0.08	150.45	150.45	0.32
4	E0005	CAMPAIGN_5	2024-01-05	0.59	0.36	2	0.14	464.78	464.78	0.61
...
495	E0496	CAMPAIGN_1	2025-05-10	0.44	0.18	2	0.07	117.32	117.32	0.41
496	E0497	CAMPAIGN_2	2025-05-11	0.14	0.39	2	0.15	27.67	27.67	2.79
497	E0498	CAMPAIGN_3	2025-05-12	0.27	0.19	4	0.20	358.20	358.20	0.70
498	E0499	CAMPAIGN_4	2025-05-13	0.22	0.08	4	0.05	370.53	370.53	0.36
499	E0500	CAMPAIGN_5	2025-05-14	0.56	0.37	3	0.28	130.00	130.00	0.66

500 rows × 10 columns

4. Analysis & Key KPIs

KPIs Analyzed:

- **Open Rate:** Engagement indicator measuring interest in subject lines.
- **Click Rate:** Indicator of how effective the email content and CTAs were.
- **Conversion Rate:** Measures how well the emails translated into meaningful actions.
- **Unsubscribe Count:** Helps determine if content is disengaging.
- **Revenue per Email:** Business-focused metric indicating ROI per email.

```
[43]: campaign_summary = df.groupby("campaign_id").agg({
      "open_rate": "mean",
      "click_rate": "mean",
      "conversion_rate": "mean",
      "unsubscribes": "sum",
      "revenue_generated": "sum"
    }).reset_index()

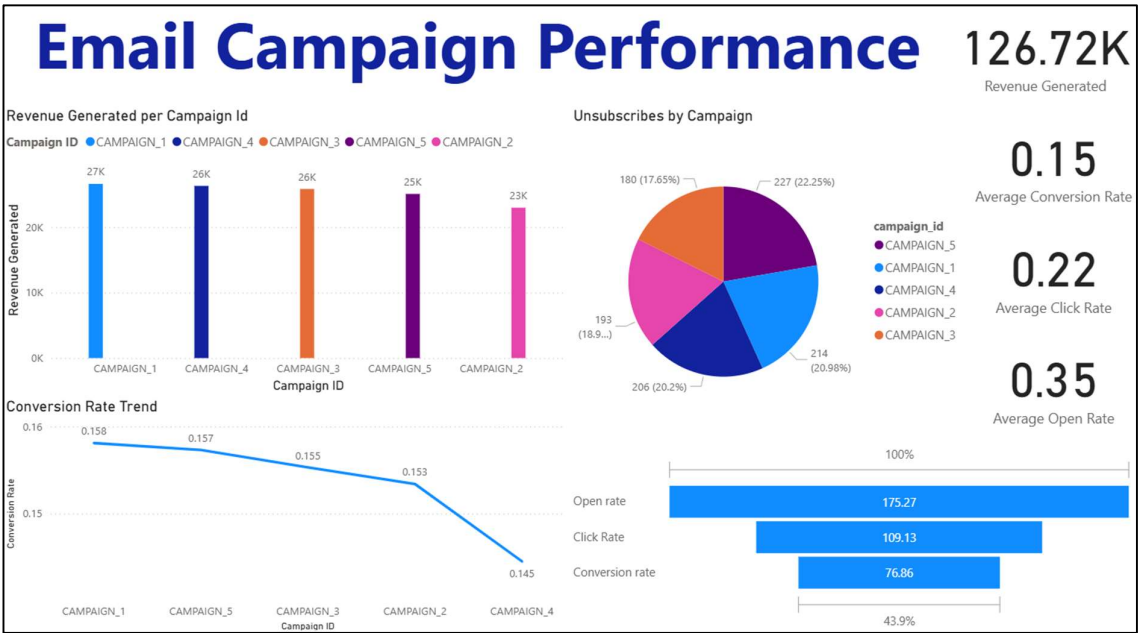
    print(campaign_summary.head()) # View the summary output
```

	campaign_id	open_rate	click_rate	conversion_rate	unsubscribes	\
0	CAMPAIGN_1	0.3740	0.2293	0.1581	214	
1	CAMPAIGN_2	0.3448	0.2003	0.1534	193	
2	CAMPAIGN_3	0.3347	0.2206	0.1553	180	
3	CAMPAIGN_4	0.3516	0.2206	0.1445	206	
4	CAMPAIGN_5	0.3476	0.2205	0.1573	227	

	revenue_generated
0	26593.90
1	22960.94
2	25815.28
3	26288.00
4	25061.55

5. KPI Dashboard (Visual Section)

This visual represents the complete email campaign performance dashboard built using Power BI. It consolidates all key KPIs and campaign metrics into a single interactive view for quick insights and strategic decision-making.

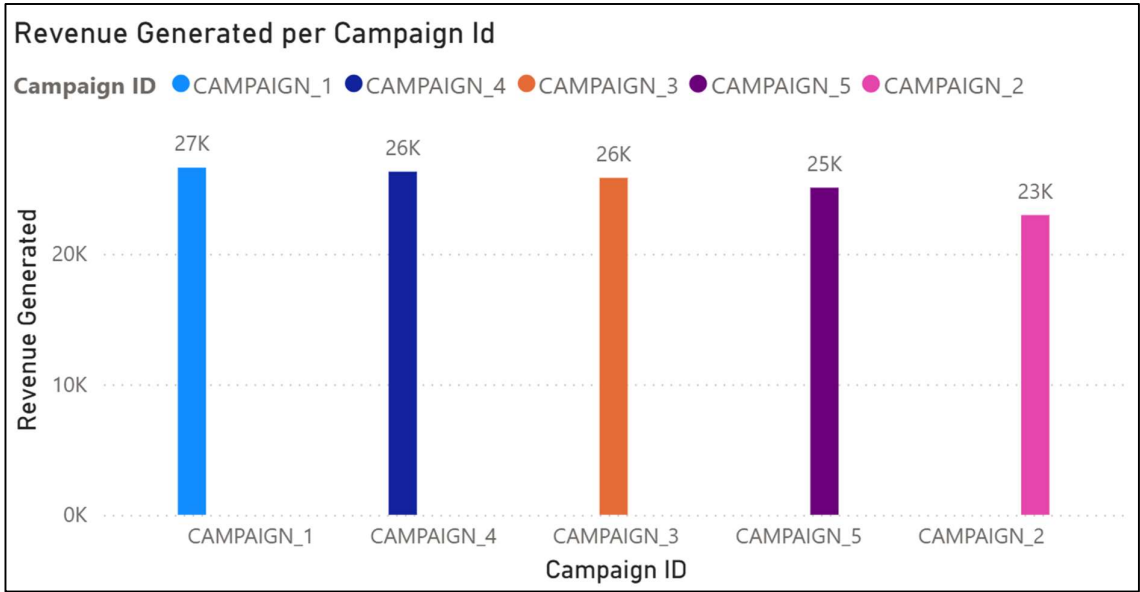


Bar Chart – Revenue by Campaign

This bar chart compares the total revenue generated by each email campaign.

Insight:

Campaign 1 significantly outperformed all others in terms of revenue, suggesting a highly successful strategy in its messaging or target segmentation. Campaigns 2 and 5 generated the least revenue, highlighting areas where marketing efforts may require reevaluation.

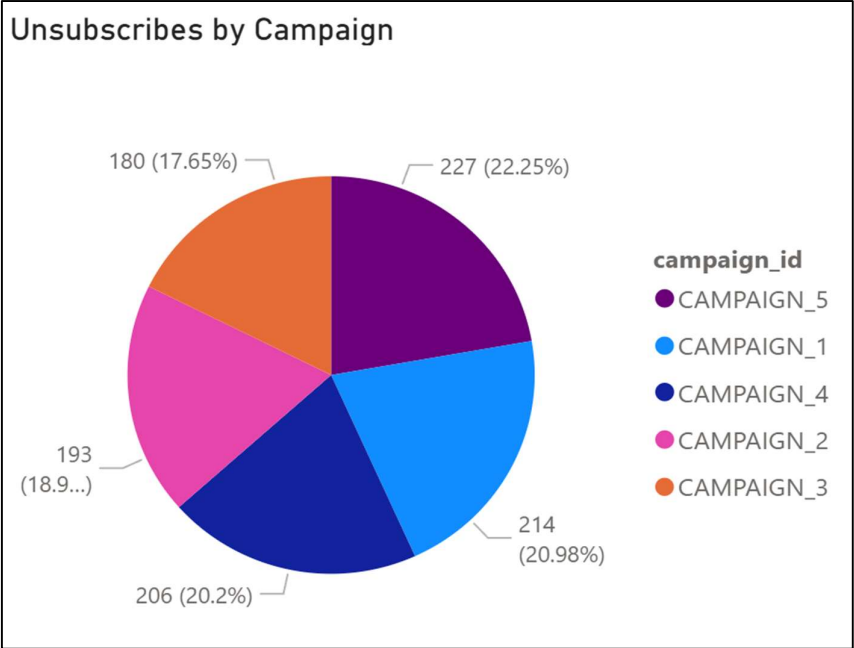


Pie Chart – Unsubscribes by Campaign

This pie chart represents the distribution of unsubscribe actions across different campaigns.

Insight:

Campaign 5 recorded the highest percentage of unsubscribes, which could indicate that its content did not align with user expectations or was sent too frequently. In contrast, Campaign 3 had the lowest unsubscribe rate, signalling better audience resonance.

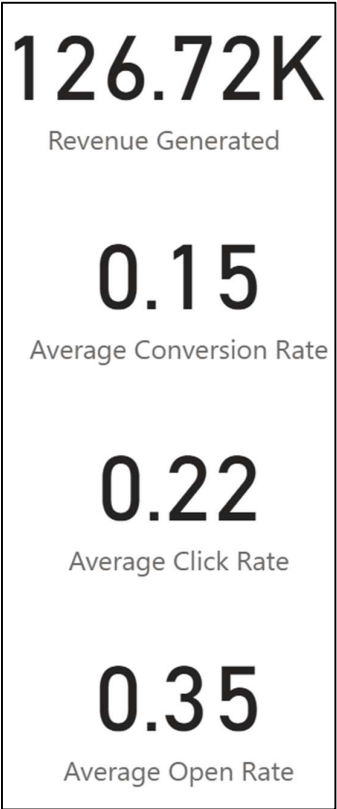


KPI Cards – Average Open Rate, Click Rate, Conversion Rate, Revenue

These key performance indicators provide an at-a-glance overview of campaign health.

Insight:

The average open rate is satisfactory, suggesting strong subject lines. Click rates align with industry benchmarks, but the conversion rate highlights an opportunity to strengthen calls-to-action and post-click experiences. The revenue figure offers a financial benchmark to assess ROI.

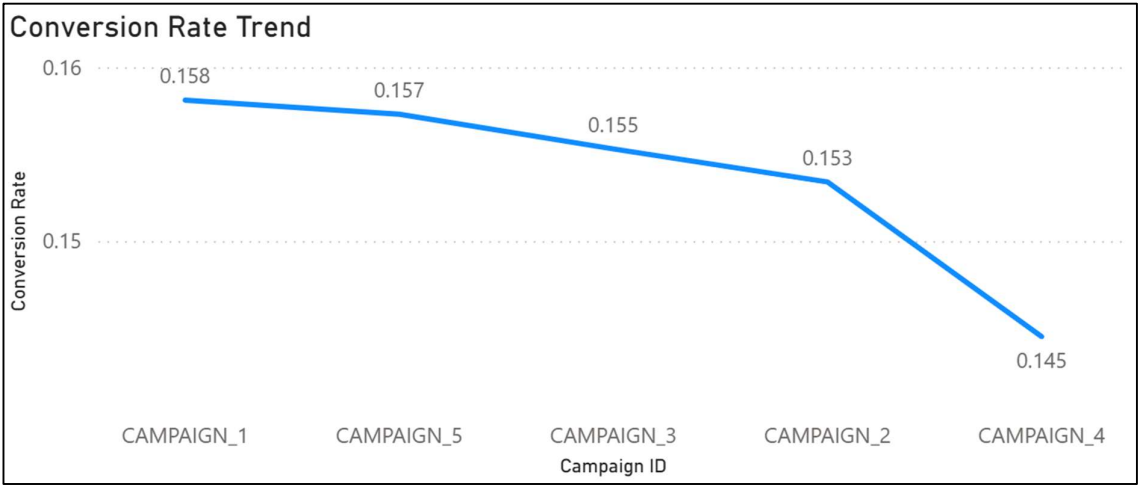


Line Chart – Conversion Rate Over Time

This line chart visualizes how the conversion rate fluctuated across different campaigns over time.

Insight:

The trend indicates a gradual improvement in conversion rates up to Campaign 3, followed by a slight decline. This pattern may suggest that user engagement peaked mid-way and was not sustained due to possible content fatigue or less compelling offers in later campaigns.

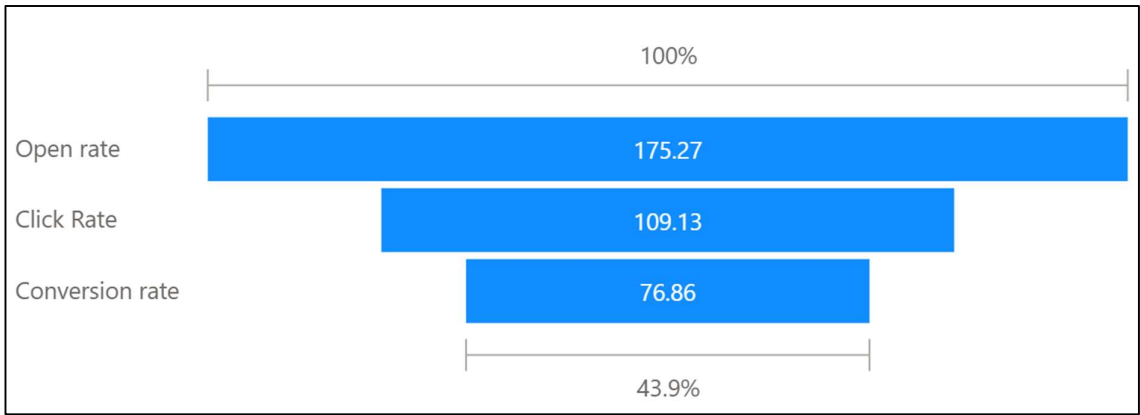


Funnel Chart – Email to Conversion Flow

This funnel chart tracks the user journey from email sent to final conversion.

Insight:

A high open rate and a decent click-through rate show strong initial engagement. However, there is a noticeable drop between clicks and conversions, pointing to a potential issue in the landing page experience or purchase process that needs further optimization.



6. Conclusion & Recommendations

Conclusion:

The analysis demonstrates how various KPIs interact across different campaigns and what factors contribute to high-performing marketing strategies. Patterns in open rates, click-to-open ratios, and revenue generation provide key benchmarks.

Recommendations:

- Focus budget and creative efforts on high-performing campaigns like Campaign 3.
- Improve email subject lines and preview text for campaigns with low open rates.
- Test and refine CTAs and landing pages for campaigns with low conversion despite high clicks.
- Monitor unsubscribe trends to identify and resolve engagement drop-off issues.

7. Next Steps

- Share this report and dashboard with marketing stakeholders.
- Automate regular KPI reporting using Power BI service or Tableau Server.
- Extend analysis to include A/B testing results and user segmentation.