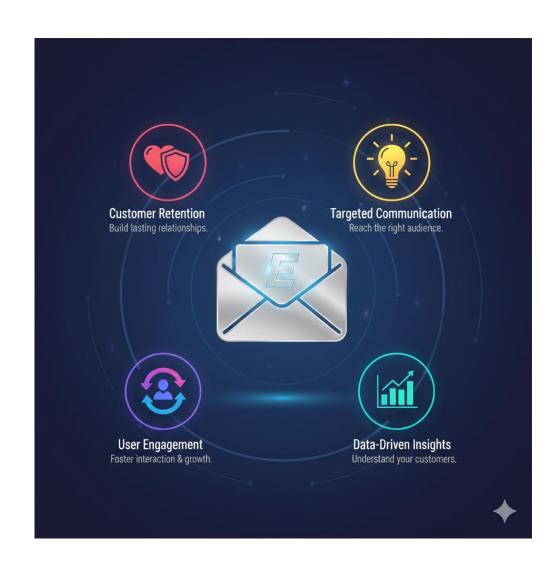
Decoding Email Unsubscribes A Data Driven Story

Exploring engagement, timing, and audience behavior.

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INTRODUCTION

- Email marketing is a direct and costeffective way to engage customers and promote products or services.
- b) It allows targeted communication through personalized campaigns and newsletters.
- c) Key metrics like **open rate**, **click rate**, and **unsubscribe rate** reveal audience engagement and campaign performance.
- d) Analysing these metrics helps optimize content, improve retention, and reduce customer churn.



OBJECTIVE

To analyse email campaign performance and user engagement behavior to identify the factors influencing unsubscribe rates and detect at-risk users for improving customer retention and campaign effectiveness.

DATASET OVERVIEW

☐ Data Source:

Mary Knoeferl Monthly Email Marketing Challenge Database Consists of 5 relational tables capturing campaign, engagement, and unsubscribes.

Dataset Structure

Table	Key Columns	Purpose
Users	user_id, signup_date, device_type, region, is_active	Contains user demographics and activity status.
Campaigns	campaign_id, campaign_name, send_date, send_hour, category	Defines each email campaign's metadata
Campaign_Performance	campaign_id, total_sent, total_open, total_clicks, total_unsubscribers	Aggregated campaign-level metrics.
Email_Engagement	engagement_id, user_id, campaign_id, opened, clicked, open_time, unsubscribe	Tracks user-level email interactions.
Unsubscribe	unsubscribe_id, user_id, campaign_id, unsubscribe_date, reason	Details users who unsubscribed and their reasons.

Methodology

- a) Data Extraction: Exported data from SQLite and converted to CSV format.
- **b) Data Loading:** Imported CSV files into MySQL.
- c) Exploratory Data Analysis: EDA was performed was MySQL.
- **d) Visualisation:** Used Powerbi for visualization
- e) Presentation: Summarized insights and visual findings into a PowerPoint report.

WORKFLOW OVERVIEW











Key Performance Indicators

Total Users

5000

Emails Sent

30K

Unsubscribers

1,516

Unsubscriber%

5.05%

Total Campaigns

20

Open%

59.72%

Click%

18.07%

Engagement%

77.79%

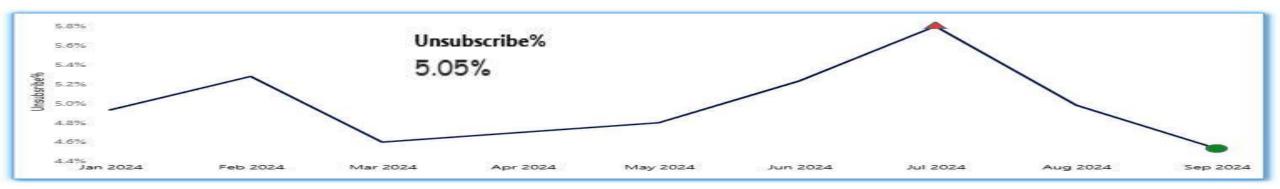
Unsubscribe Rate Analysis

July Unsubscribe%
5.80%
Sep Unsubscribe%
4.53%

- a) The overall unsubscribe rate is 5.05%, remaining stable from January to June.
- b) It **peaked in July 2024** at **5.80%**, before improving to its **lowest point in September 2024** (4.83%).

Concerns

- a) An unsubscribe rate above 1% is considered alarming in email marketing benchmarks.
- b) A **5.05% rate** signals **serious audience dissatisfaction** users are opting out faster than new ones can be retained.



Why Unsubscribe rate is very high?

Our campaigns achieved a high open rate, indicating that users are interested in reading our emails, and a high click rate, showing that the content successfully motivates users to take action.

However, we also observed a high unsubscribe rate. This suggests that the issue is not in attracting attention, but rather in retaining user trust and satisfaction after engagement.

Possible reasons include:

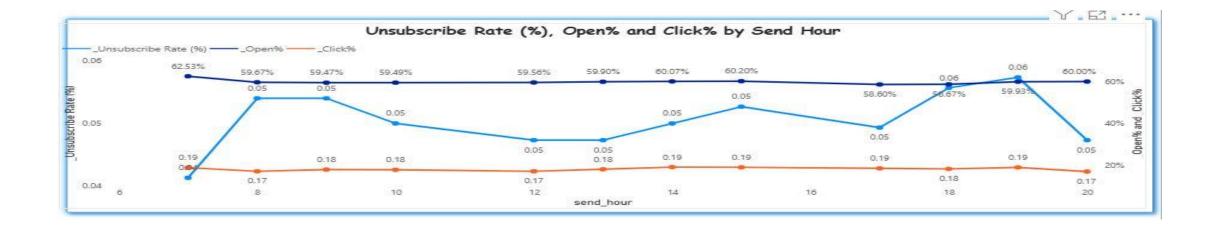
- 1. Misleading or clickbait subject lines.
- 2. Overly aggressive follow-up emails.
- 3. Privacy concerns (to be discussed in upcoming slides).
- 4. Irrelevant or disappointing post-click experience.

Impact of Send Hour on Unsubscribe Rate

The open rate remains relatively stable across all hours, ranging between 58.6% and 62.5%, while the click rate also stays consistent around 17% to 19%, indicating that engagement after opening is not strongly influenced by send time.

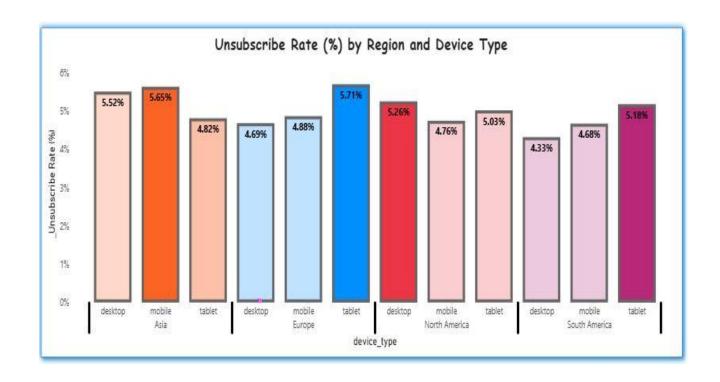
However, the **unsubscribe rate** shows greater fluctuation between **0.04 and 0.06** peaking around **7 AM**, **6 PM**, and **7 PM**.

This pattern suggests that users are more likely to check emails before and after work hours, resulting in higher engagement but also increased unsubscribe activity, likely driven by email fatigue or frustration during these busy periods.



Geography of Unsubscribes

Mobile users in Asia (5.65%) and tablet users in Europe (5.71%) have the highest unsubscribe rates. This suggests possible mobile optimization issues in Asia and tablet-specific design or formatting problems in Europe. Desktop users generally show stronger retention, indicating emails perform better on larger screens.

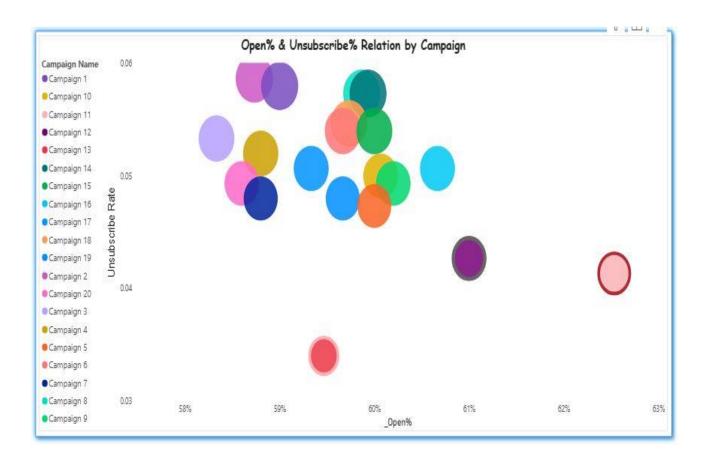


Unsubscribe Rate vs. Open Rate: Key Findings

Open rate is not a reliable indicator of unsubscribe behavior.
The main driver of unsubscribes is the quality and relevance of email content, not subject line appeal.

Campaign 13 achieved the lowest unsubscribe rate (3.4%) with a moderate open rate (59.5%), indicating strong content alignment with audience interests.

Several campaigns show high unsubscribe rates (5.5–6%) despite similar **open rates (58–61%)**, suggesting disengagement after opening, likely due to poor content value or mismatch with user expectations.

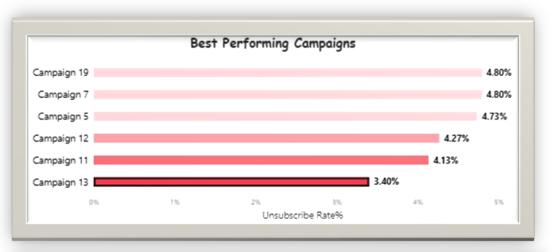


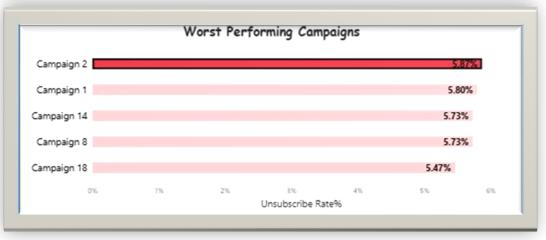
Campaign Performance Overview

Although Unsubscribe rates is very high & vary significantly across campaigns, ranging from **3.4% to 5.9%**.

Campaign 13 (3.4%) sets the benchmark for strong audience retention, followed by Campaigns 11 and 12 (4.1–4.3%) with solid performance.

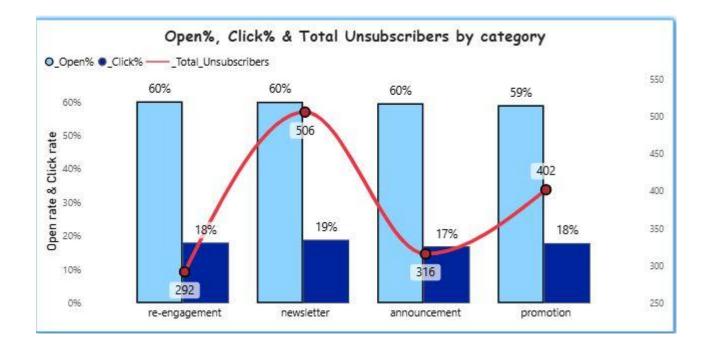
In contrast, Campaigns 1 and 2 (5.8–5.9%) show the highest churn, about 73% higher than the best performer, indicating major content or targeting issues.





Category wise Engagement & Unsubscribers breakdown.

Engagement rates remain steady across categories (Open: 59-60%, Click: 18%), but the Newsletter category drives the highest churn with 506 unsubscribes. This can be due to privacy Concerns or over frequency within newsletters, requiring immediate optimization of send strategy and content relevance.



Why Users Are Unsubscribing?

Unsubscribe rate stands at 5.05%, driven mainly by privacy concerns (334), irrelevant content (305), too many emails (297). Asia shows the highest churn (417 unsubscribes) due to frequency overload, while Europe leads in brand switching (162). Overall, weak content relevance and low trust remain the key causes of user attrition.

category	ASId	Europe	North America	South America	lotai
☐ announcement	93	68	87	68	316
Found better brand	-19	12	15	19	65
Not relevant	15	14	15	11	55
Other	17	12	24	13	66
Privacy concerns	21	16	18	10	65
Too many emails	21	-14	15	15	65
□ newsletter	144	120	130	112	506
Found better brand	28	26	26	24	104
Not relevant	30	21	27	23	101
Other	25	23	22	13	83
Privacy concerns	30	29	30	27.	116
Too many emails	31	21	25	25	102
☐ promotion	109	109	84	100	402
Found better brand	22	15	14	23	74
Not relevant	23	27	23	20	93
Other	25	20	14	28	87
Privacy concerns	23	29	-14	16	82
Too many emails	16	18	19	13	66
☐ re-engagement	71	83	78	60	292
Found better brand	16	16	13	13	58
Not relevant	10	16	17	13	56
Other	10	14	16	3	43
Privacy concerns	14	23	21	13	71
Too many emails	21	14	11	18	64
Total	417	380	379	340	1516

Summary Of Key Findings.

1. Overall Performance

- a. Average unsubscribe rate: **5.05%**, well above the acceptable benchmark of 1–2%.
- b. Peak churn in July 2024 (5.8%), lowest in September 2024 (4.8%).
- 2. Campaign-Level Insights
- a) Campaign 13 (3.4%) sets the benchmark for strong content and targeting.
- b) Campaigns 1 & 2 (5.75%) show critical weaknesses causing high churn.
- 3. Category & Region Trends
- a) Newsletter category leads in total unsubscribes (506).
- **b)** Asia shows high churn due to excessive email frequency (417 unsubscribes).
- c) Europe churn driven by "better brand" perception (162 cases).
- 4. Core Reasons for High Unsubscribes
- a) Privacy Concerns (334) Lack of user trust and data transparency.
- b) Too Many Emails (297) Poor frequency management.
- c) Irrelevant Content (395) Weak personalization and targeting.

Strategic Recommendations

1. Content & Targeting

Since **Engagement Rate** is good but still our unsubscribe rate is high which means there is some issue with content. We need to refine content strategy to improve relevance and personalization.

Also we need to overhaul the newsletter content because it brings one third of unsubscribers.

2. Frequency Optimization

Reduce send frequency for **Asia** and **Newsletter** campaigns where fatigue is highest.

Adopt engagement-based scheduling send fewer emails to low-activity users.

Strategic Recommendations

3. Trust & Compliance

Address **privacy concerns** by clearly communicating data usage policies.

Add visible unsubscribe options and reinforce transparency in email footers.

4. Segmentation & Personalization

Leverage **region** and **device_type** fields to tailor message timing and format.

Use behavioural data to customize content for re-engagement and promotions.

Conclusion

- a) Our analysis reveals that high unsubscribe rates are primarily driven by poor targeting, excessive email frequency, and low content relevance across certain segments and regions.
- b) Mobile users and evening campaigns show high engagement but also a spike in unsubscribes, indicating content fatigue and potential over exposure.
- c) Device and regional trends suggest the need for personalized, time-sensitive, and frequency-controlled campaigns.
- d) Implementing the recommended data-driven segmentation, A/B testing, and optimized timing strategies can significantly reduce unsubscribes while boosting engagement and retention.
- e) Going forward, continuous monitoring of engagement KPIs and iterative testing will ensure sustained improvement in campaign performance.

Thank you so much for your time.

Special thanks to <u>Mary Knoeferl</u> for arranging this challenge.