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I. Project Details

Project Title: Newsletters analysis

Data: 2023 & 2024 Newsletters (Excel file)

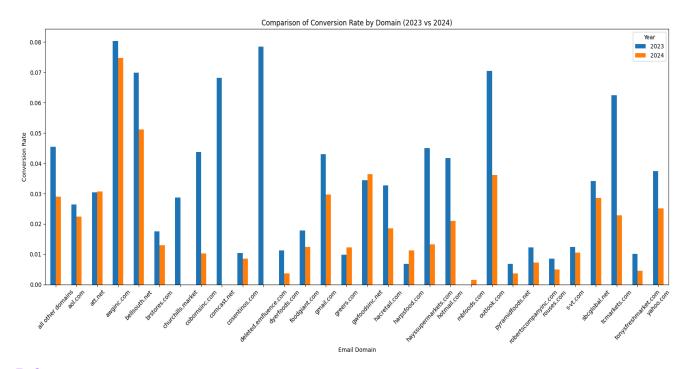
Key Terms and Definitions:

- 1. Title: Name of the email for internal organizational purposes only
- 2. Subject: the subject line of the email that receivers can see.
- 3. Date: The date the email was sent
- 4. Sent: Number of contacts the email was sent to
- 5. Unique views: the unique number of people who opened and viewed the email.
- 6. Unique Views %: the percentage of the unique number of people who opened the email
- 7. Total Views: the total number of times an email was opened and viewed. This can include the same person opening the email multiple times.
- 8. Total views %: the percentage of total times an email was opened and viewed.
- 9. Unique clicks: The number of times links in the email was clicked. This does not include someone clicking on the same link multiple time, but does include multiple people clicking on the same link.
- 10. Unique clicks %: percentage of the unique clicks listed above.
- 11. Total Clicks: The total number of clicks all of the links in an email received. This includes the same person clicking on a link multiple times.
- 12. Total Clicks %: the percentage of the total clicks listed above.
- 13. Bounces: the number of times the email bounced and didn't make it to a recipient's inbox like intended.
- 14. Bounces %: the percentage of the bounces above.
- 15. Unsubscribe: the number of people who have opted out of receiving future emails.
- 16. Unsubscribe %: percentage of people who unsubscribed based on the total number of recipients.
- 17. Complaints: the number of people who marked the email as spam.
- 18. Complaints %: the percentage based on the complaints.

II. Exploratory Data Analysis:

2.1 Comparison of Conversion Rate for 2023 and 2024 by Domain

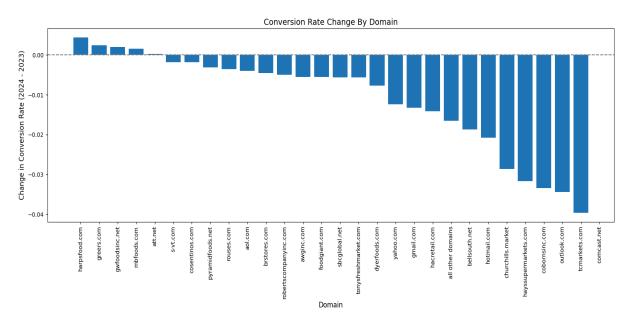
Conversion Rate estimates the effectiveness of the email in prompting desired actions (like unique clicks). Conversion Rate = (Unique Clicks) / (Sent) *100



- The domains "awginc.com" and "deleted.enfluence.com" have the highest conversion rates in 2023, reaching over 8%, indicating these domains are consistently effective in prompting user actions.
- Some domains show an increase in conversion rates in 2024 compared to 2023 (e.g., "gwfoodsinc.net," "att.net," "greers.com" and "harpsfood.com"), suggesting improved engagement or targeting strategies in 2024.
- However, many domains have a decrease in conversion rates in 2024, which could point to reduced user engagement or effectiveness in email content over time.
- Domains such as "harpsfood.com" and "mbfoods.com" consistently have low conversion rates in both years, suggesting limited user interaction or lower relevance of email content for recipients within these domains.

2.2 Conversion Rate Change By Domain

The chart shows the change in conversion rates for different email domains in 2024 compared to 2023.

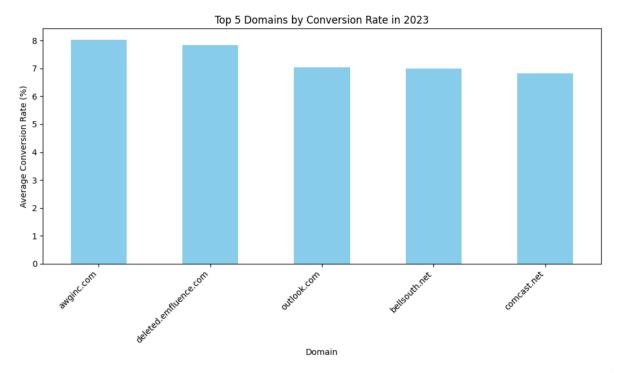


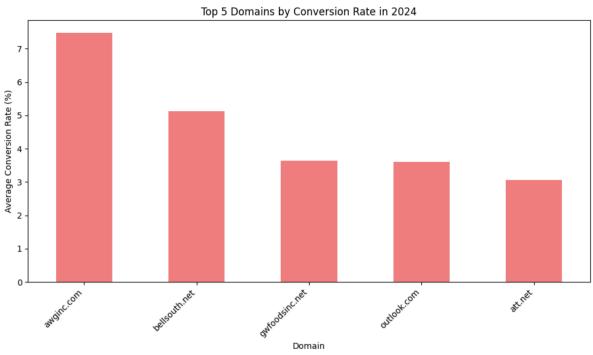
Inference:

- "harpsfood.com", "greers.com", "gwfoodsinc.com" and "mbfoods.com" are among the few domains with an increase in conversion rate in 2024, with a relatively large growth. This suggests that user engagement with emails for these domains improved in 2024, possibly due to enhanced email content or more targeted strategies.
- Most domains experienced a decline in conversion rates in 2024, with "outlook.com," "temmarkets.com" and "cobomsine.com" showing the largest decreases. This could imply that the appeal of the email content has declined, or that user engagement for these domains has decreased.
- Only a few domains showed an increase in conversion rates, while the majority of domains experienced negative changes in 2024. This suggests an overall decline in user engagement with emails, potentially reflecting a decrease in email effectiveness over time or waning user interest.

2.3 Top 5 Domains by Conversion Rate in 2023 and 2024

We select the top 5 domains based on the peak performance in these two years to analyze their conversion rate.





- **awgnic.com:** The conversion rate remained steady at around 8% in both 2023 and 2024. This stability indicates a successful and consistent approach to engaging users and converting them. Maintaining these strategies and exploring new enhancements could sustain or improve this performance.
- **outlook.com:** The conversion rate stayed around 7% in 2023 but experienced a slight decline to just below 4% in 2024. This drop suggests a potential decrease

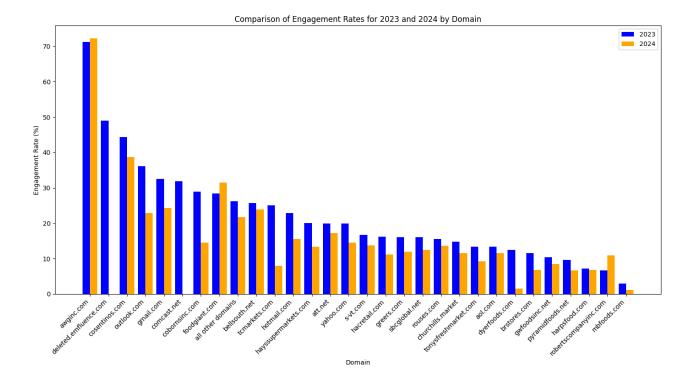
- in content relevance or effectiveness. Small tweaks, like personalized content or new formats, might help maintain interest and boost conversions.
- **bellsouth.net:** There was a significant decline in the conversion rate, dropping from nearly 7% in 2023 to around 5% in 2024. This sharp decrease could indicate a need to reassess marketing strategies, perhaps focusing on more engaging or customized content to reconnect with this audience.
- **comcast.net:** In 2023, comcast.net performed relatively well among the top 5 domains, maintaining a consistent conversion rate close to the other leading domains. Although it wasn't at the very top, its performance was strong, suggesting it had a steady interaction with its audience.
- att.net: In 2024, att.net appeared as one of the top 5 domains but had a relatively lower conversion rate compared to others like awginic.com and bellsouth.net. This suggests that while it continued to maintain a presence in the top 5, its effectiveness in converting unique views to clicks was somewhat less impressive compared to other domains.

2.4 Comparison of Engagement Rate for 2023 and 2024 by Domain

Engagement Rate is a measure of views and clicks to measure overall engagement with the email.

Engagement Rate = (Unique Views + Unique Clicks) / (Delivered) *100

Since the data in the Newsletter lacks Delivered data, we found that the actual error of Sent and Delivered data is small, so Sent data is used instead of Delivered in this part.

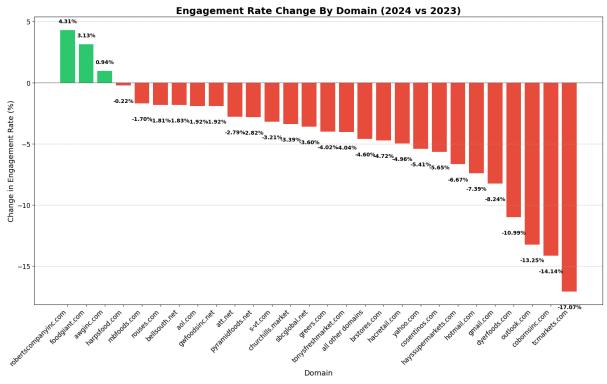


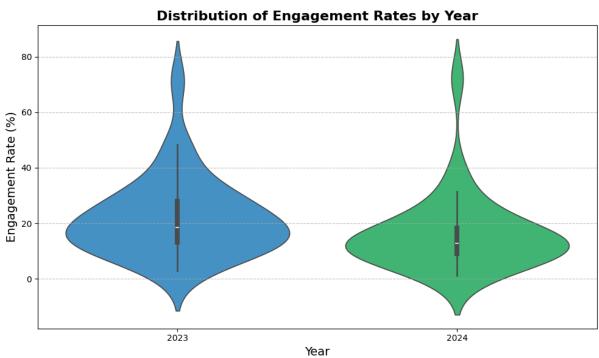
- **awgnic.com**: This domain leads with the highest engagement rate, surpassing 70% in both 2023 and 2024. There is a slight increase in 2024 compared to 2023, the high engagement indicates that email strategies are effectively capturing user interest, showing consistent interaction over the two years.
- **deleted.enfluence.com**: The engagement rate stayed close to 50% in 2023. However, this domain had no data in 2024 to point out declines or improvements.
- **cosentinos.com**: Engagement rates are strong, reaching around 45% in 2023, but there is a noticeable decrease to around 40% in 2024. The decline indicates a potential need to review and refresh content to sustain or improve engagement.
- **outlook.com**: The engagement rate was just over 35% in 2023 but fell to around 22% in 2024. This decline might be due to changing user preferences or less effective content, suggesting a reevaluation of the engagement strategy for this domain.
- **gmail.com**: The engagement rate for this domain remained above 30% in 2023 and decreased about 10% in 2024. Maintaining this high engagement may require enhanced targeting and relevant email content.

- **comcast.net**: Engagement rates were similar to those of Gmail, with a decline from around 30% in 2023 to below 25% in 2024. A strategic focus on re-engaging users may be beneficial to reverse this trend.
- **aol.com**: This domain had moderate engagement rates around 15% in 2023, which fell further in 2024. The decline may signal a growing disinterest from AOL users, requiring more compelling and tailored content.
- **robertscompanyinc.com**: Engagement was consistently low, barely reaching 5% in both years. Efforts should be directed towards a different approach or reevaluating the target audience for better engagement.
- **mbfoods.com**: The engagement rate is the lowest, less than 3% in both years. This minimal level suggests that email strategies for this domain are highly ineffective, and a complete content overhaul or different marketing approach is needed.
- The update restored the engagement rate of **hayssupermarkets.com** and **churchills.market** in 2024. Compared to 2023, both have declined, and marketing strategies for target users need to be adjusted.

2.5 Engagement Rate Change By Domain

The chart shows the change in engagement rates for different email domains in 2024 compared to 2023.





As shown in the violin plot, the 2024 distribution has clearly shifted downward with weakened concentration. Average engagement rate dropped from 22.11% to 16.26%, an absolute decrease of 5.86 percentage points and a relative decline of

26.48% Only 10.7% of domains showed improved engagement rates, while 89.3% experienced varying degrees of decline.

Domains with Outstanding Positive Changes

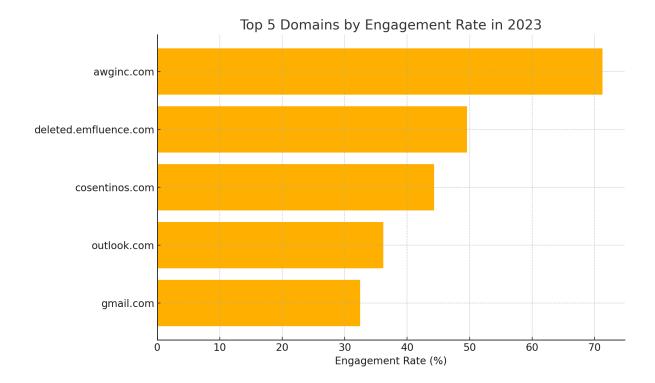
- **robertscompanyinc.com**: Increased from 6.61% to 10.91% (+4.31%), a relative growth of 65.2%, showing significant improvement despite a low starting point
- **foodgiant.com**: Improved from 28.35% to 31.47% (+3.13%), continuing to grow from an already solid base
- **awginc.com**: Slightly increased from 71.25% to 72.20% (+0.94%), maintaining the highest engagement level

Domains with Severe Declines

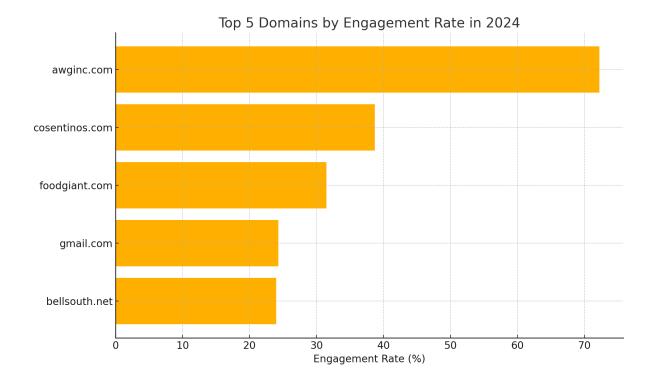
- tcmarkets.com: Plummeted from 25.00% to 7.93% (-17.07%), losing 68.3% of its engagement
- **cobornsinc.com**: Dropped from 28.53% to 14.39% (-14.14%), engagement rate almost halved
- **outlook.com**: Decreased from 36.20% to 22.94% (-13.25%), a significant decline for a major email service provider
- **dyerfoods.com**: Fell from 12.51% to just 1.52% (-10.99%), a relative decrease of 87.8%

2.6 Top 5 Domains by Engagement Rate in 2023 and 2024

We select the top 5 domains based on the peak performance and trend growth in these two years to analyze their engagement rate.



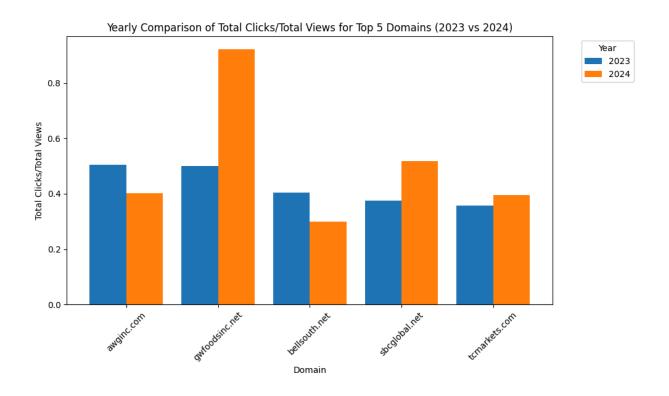
- **awginc.com:** This domain had the highest engagement rate in 2023 at 71.3%, showing strong and consistent interaction with email content. This suggests effective targeting and relevance in the messaging strategy for this audience.
- **deleted.emfluence.com:** This domain reached third place with a 49.6% engagement rate. While not a widely recognized domain, its high interaction rate suggests a niche but highly responsive audience.
- **cosentinos.com:** With a 44.3% engagement rate, this domain ranked second in 2023. The high interaction indicates strong alignment between email content and user interests, though future performance should be monitored to sustain engagement.
- **outlook.com:** Ranked fourth, outlook.com users showed a 36.2% engagement rate. Although not as high as the top domains, this still reflects decent engagement and potential for growth through content refinement.
- **gmail.com:** Despite its large user base, gmail.com had an engagement rate of 32.5%, placing fifth. This indicates moderate effectiveness, suggesting that further segmentation or personalization may help boost performance with this broad audience.



- awginc.com: Maintaining the top position in 2024 with an improved engagement rate of 72.2%, this domain continues to show strong user interaction. The increase indicates successful audience retention and effective email strategies.
- **cosentinos.com:** Dropping to second place with an engagement rate of 38.7%, this domain saw a noticeable decline from 2023. The drop may suggest reduced relevance or content fatigue, indicating a need for refreshed messaging.
- **foodgiant.com:** A new entrant in the top 5, foodgiant.com achieved a 31.5% engagement rate. This reflects growing interest from users in this domain, suggesting potential for further targeting and audience development.
- **gmail.com:** With an engagement rate of 24.3%, gmail.com saw a slight decrease compared to 2023. While still performing reasonably well, this trend suggests room for improvement through better segmentation or more compelling content.
- **bellsouth.net:** Also new to the top 5, bellsouth.net recorded the lowest engagement rate among the top domains at 24.0%. This may point to a less engaged or harder-to-reach audience, signaling an opportunity for revised content strategy.

2.7 Total Clicks over Total Views Comparison For Top Five Domains in 2023 and 2024

The ratio of total clicks to total views was calculated across domains. The top 5 which appeared in both 2023 and 2024 were considered for analysis. The bars are sorted in descending order (with respect to 2023).

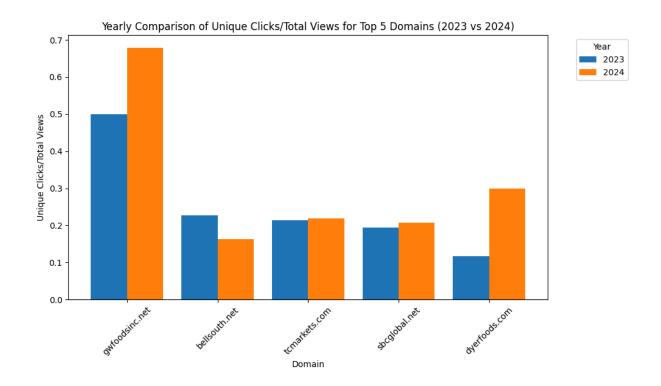


Inference:

The graph indicates that the ratio of total clicks to total views was higher in 2024 for 3 out of the top 5 domains. This indicates that greater views resulted in clicks when emails were sent on a weekly basis when compared to the previous year. 'awginc.com' is the top-performer in 2023, while 'gwfoosinc.net' leads in 2024. 'gwfoodsinc.net' has experienced the highest difference. The total click to total view ratio increased from 0.5 to almost 0.9, indicating almost all emails viewed were clicked in the latter year. Overall, 2024 has a slightly better total click to total view ratio, indicating that when individual domains are considered, emails sent on a weekly basis performed better.

2.8 Unique Clicks over Total Views Comparison For Top Five Domains in 2023 and 2024

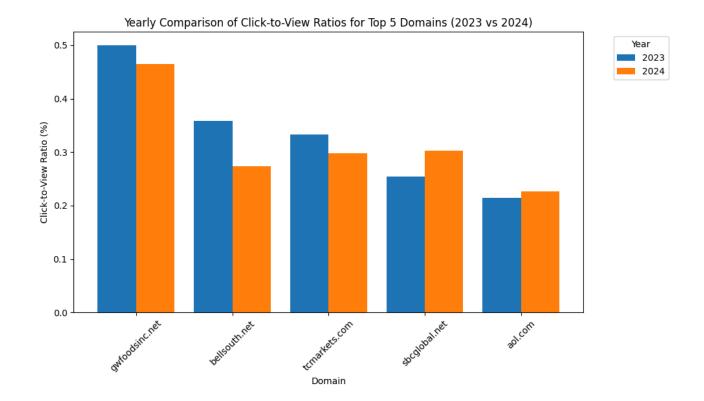
The ratio of unique clicks to total views was calculated across domains. The top 5 which appeared in both 2023 and 2024 were considered for analysis. The bars are sorted in descending order (with respect to 2023).



Inference: The graph indicates that the ratio of total clicks to total views was higher in 2024 for 4 out of the top 5 domains. 'gwfoodsinc.net', the top-performer in both 2023 and 2024. 'gwfoodsinc.net' and 'dyerfoods.com' spiked considerably in 2024. About 70% and 30% of emails viewed were clicked by unique recipients in those cases. Overall, 2024 has a slightly better unique click to total view ratio, indicating that when individual domains are considered, emails sent on a weekly basis performed better.

2.9 Click-To-View Ratios (% of Domain) Comparison For Top Five Domains in 2023 and 2024

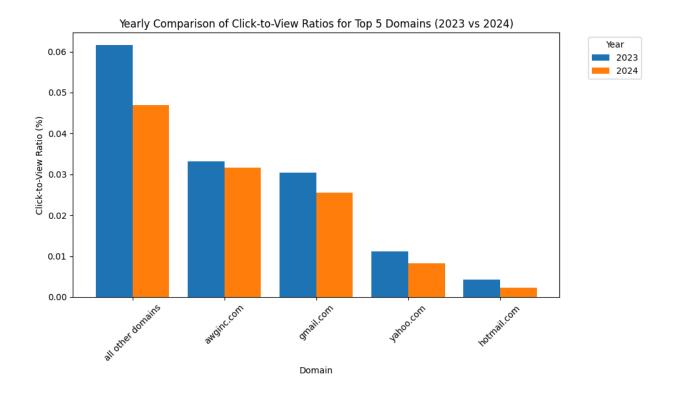
The 'Click-to-Views % of Domain' column was considered across domains. The top 5 which appeared in both 2023 and 2024 were considered for analysis. The bars are sorted in descending order (with respect to 2023).



The graph indicates that the Click-to-View ratios (as a percentage of Domains) were higher in 2023 for 3 out of the top 5 domains. The highest performer is gwfoodsinc.net, where about 50% of emails sent to the domain resulted in clicks both years. Overall, 2023 has a slightly better Click-to-Views ratio, indicating that when individual domains are considered, emails sent on a biweekly basis performed better.

2.10 Click-To-View Ratios (% of Total) Comparison For Top Five Domains in 2023 and 2024

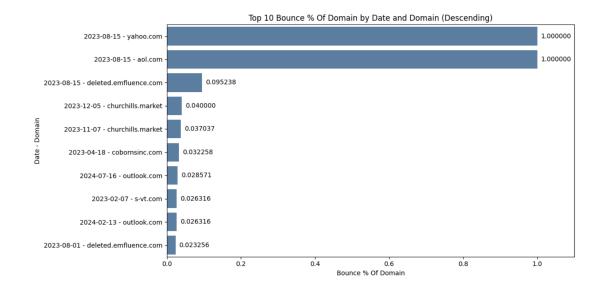
The 'Click-to-Views % of Total' column was considered across domains. The top 5 which appeared in both 2023 and 2024 were considered for analysis. The bars are sorted in descending order.



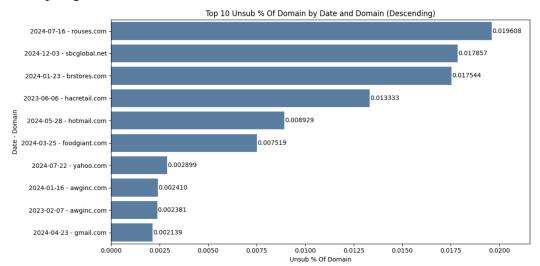
The graph indicates that the Click-to-View ratios (as a percentage of Total) were higher in 2023 for all 5 domains. Overall, 2023 has a slightly better Click-to-Views ratio, indicating that when individual domains are considered against the sum total of recipients, emails sent on a biweekly basis performed better. Similar to the previous case where percentage of domains were considered, when the total recipient list is considered, emails in 2023 had an edge over those in 2024.

2.11 Top 10 Bounce % and Unsub % Of Domain

This bar chart displays the top 10 bounce percentages for different email domains, broken down by date, showing which domains experienced the highest rates of undelivered emails due to bounces.



This bar chart illustrates the top 10 unsubscribe percentages for different email domains, segmented by date, highlighting the domains with the highest rates of recipients opting out of future emails.

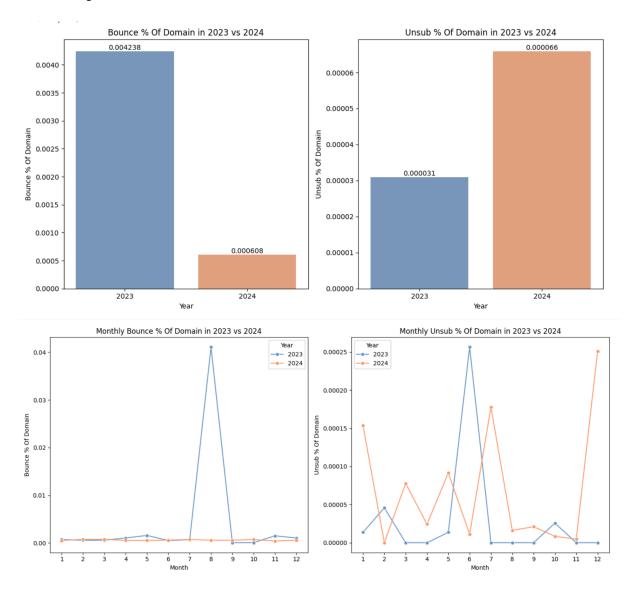


Inference:

Firstly, certain email domains experienced exceptionally high bounce rates on specific dates. For example, on August 15, 2023, both yahoo.com and aol.com recorded a 100% bounce rate. Secondly, domains such as rouses.com and sbcglobal.net showed notably high unsubscribe rates, indicating that the email content or sending frequency may not align with recipients' expectations.

Further analysis reveals that since the switch to weekly email distribution in 2024, there has been a noticeable increase in high unsubscribe incidents. This suggests that the increased frequency may be contributing to email fatigue among recipients.

2.12 Comparison of Bounce % and Unsubscribe % in 2023 and 2024



- 1. Significant Improvement in Bounce Rate: In 2024, the average bounce rate dropped significantly to 0.000608, compared to 0.004238 in 2023 a reduction of nearly 86%. From the monthly trend, bounce rates remained consistently low throughout 2024, whereas in August 2023, there was a sharp spike exceeding 0.04, most likely caused by domain-level rejections from providers such as yahoo.com or aol.com.
- 2. Unsubscribe Rate Doubled, Indicating Increased Risk of Subscriber Loss: The unsubscribe rate rose from 0.000031 in 2023 to 0.000066 in 2024. This trend may reflect content fatigue or decreased satisfaction among subscribers. Monthly data shows notable spikes in unsubscribe rates in January, June, and

- December 2024, suggesting that the shift to weekly email campaigns may have led some users to feel overwhelmed or perceive the content as repetitive, prompting them to unsubscribe.
- 3. The bounce rate peak in August 2023 and the unsubscribe rate peak in December 2024 stood out as notable anomalies in their respective years. These months may correspond to specific incidents, such as email template errors or large-scale holiday promotions. It is crucial to review the content, subject lines, and target audience strategies during these periods to identify potential issues and generate actionable insights for future improvements.

Note: Possible reasons for a few domains lacking data of 2024

These following domains don't have data of 2024: churchills.market; comcast.net; deleted.emfluence.com; hayssupermarkets.com

Possible reasons for the lack of data are that:

- The team may have reduced or stopped activity for these specific domains due to a shift in strategy or budget constraints.
- Data for these domains may be missing in 2024 due to incomplete data collection or delays in updating records for the latest year.
- The 2024 marketing campaign might have been more selective, targeting only high-engagement domains, leading to the exclusion of low-performing or inactive domains. This is likely to happen for churchill.market, as its 2023 metrics are below average. This is unlikely for the other domains that don't have data of 2024.