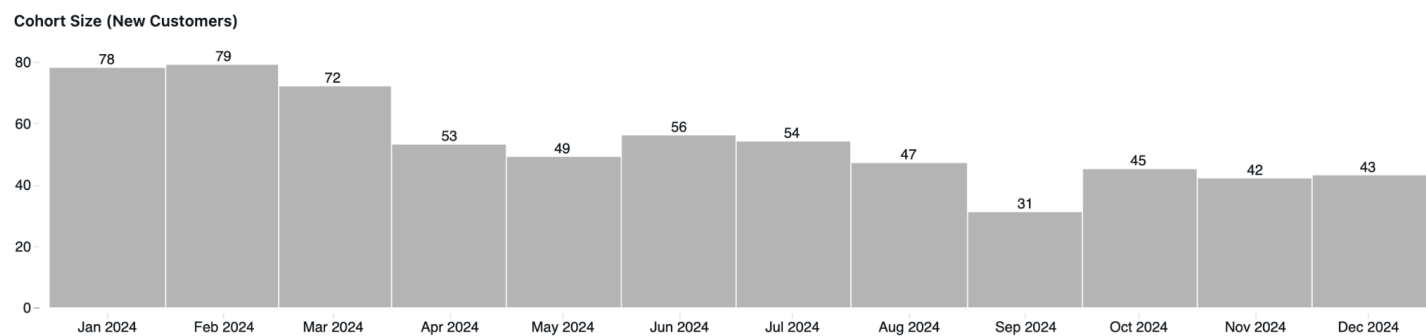# Report Ecommerce Sales

This report presents a cohort-based analysis of customer acquisition, retention, and repeat purchase behavior using e-commerce order data from 2024, later extended with 2025 data. By structuring the data into a Bronze–Silver–Gold analytics pipeline and modeling customer-level cohorts, the analysis reveals key trends in acquisition volume, time to second purchase, and repeat purchase depth.
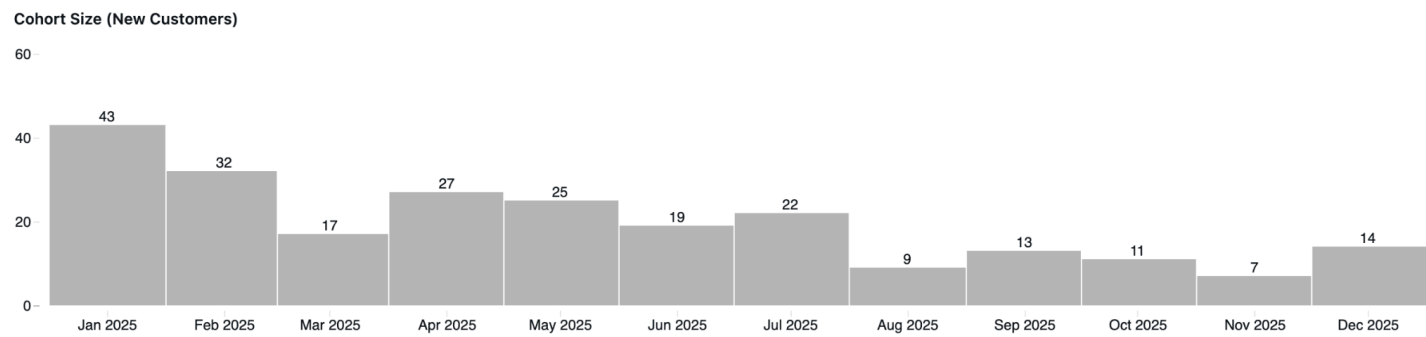
The results show a decline in customer acquisition over time, alongside stable and in some cases improving retention and repeat behavior among mature cohorts. Differences observed in recent cohorts are largely explained by cohort maturity rather than declining customer quality. These insights highlight opportunities to prioritize retention, accelerate early repeat purchases, and focus on long-term customer value to support sustainable growth.

1. Cohort Size chart

   a. Cohort Size chart (based on 2024 only)

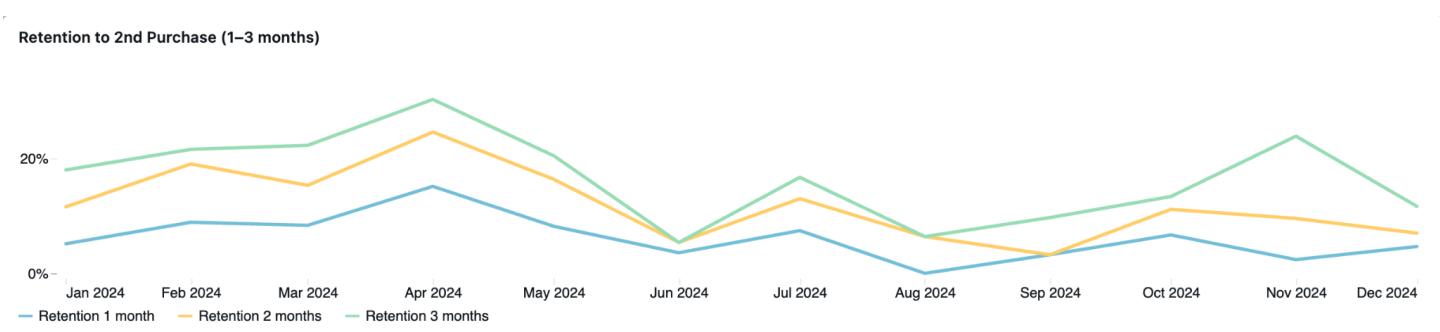   b. Cohort Size chart (after appending 2025 data)

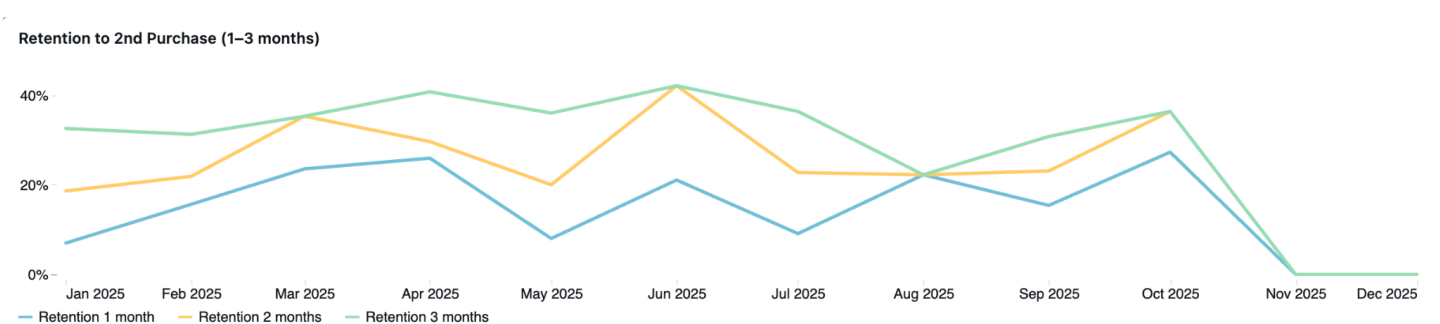   c. Acquisition trend (cohort sizes over time)

- February 2024 has the largest cohort, with 79 new customers, representing the peak of customer acquisition during the analyzed period.

- Customer acquisition peaks in early 2024 and then shows a clear downward trend over time. By December 2025, the number of new customers decreases significantly, reaching only 13 new customers. This indicates weakening acquisition momentum across the period.

- **Recommendation:** shift acquisition budget toward channels and campaigns that historically produced high-quality cohorts (e.g., February 2024 and February 2025).

2. Retention to 2nd Purchase chart

    a. Retention to 2nd Purchase chart (based on 2024 only)

Retention to 2nd Purchase (1–3 months)

    b. Retention to 2nd Purchase chart (after appending 2025 data)

Retention to 2nd Purchase (1–3 months)
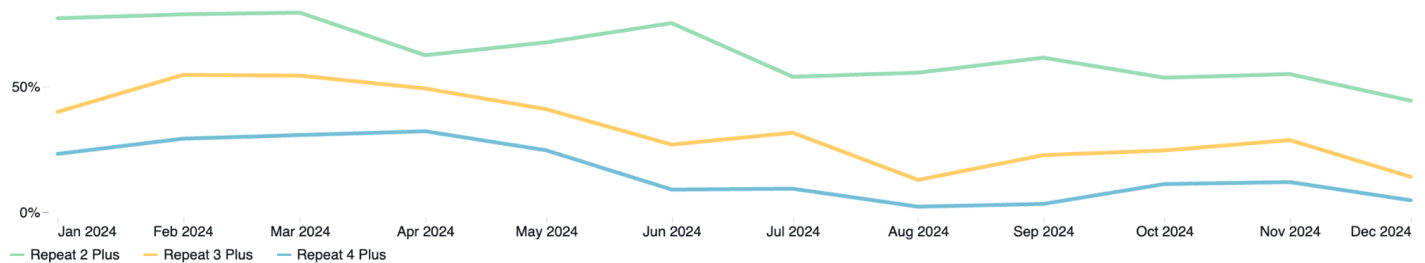

    c. Retention trend (1–3 month retention)

- June 2025 shows the strongest three-month retention, reaching **47.37%**.

- This indicates that nearly half of the customers acquired in this cohort returned to make a second purchase within three months of their first order.

- From June 2024 onward, retention increases across all cohorts until April 2025. After April 2025, one-month retention stabilizes, while two- and three-month retention continues to grow until June 2025.

- Following June 2025, retention metrics begin to decline, suggesting a change in cohort behavior or the impact of reduced cohort maturity in more recent months.

- **Recommendation:** implement time-bound incentives (e.g., discounts, free shipping, limited-time offers) that encourage a second purchase shortly after the first one.
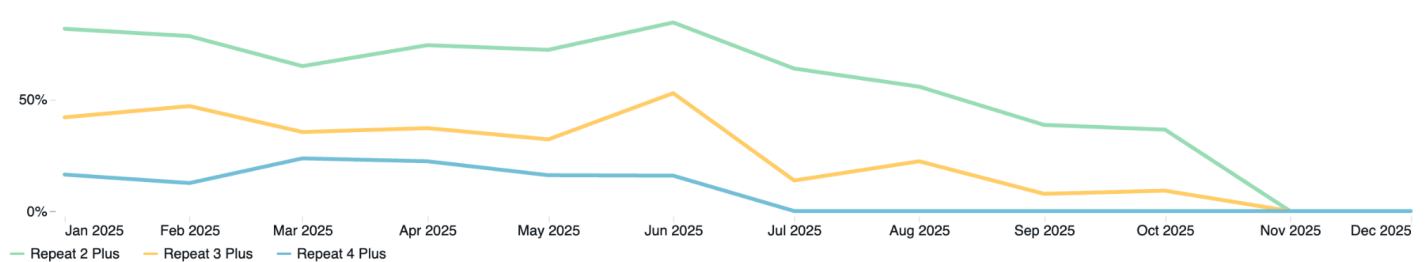
3. Repeat Purchase Depth chart

    a. Repeat Purchase Depth chart (based on 2024 only)

Repeat Purchase Depth (2+, 3+, 4+)

— Repeat 2 Plus — Repeat 3 Plus — Repeat 4 Plus

    b. Repeat Purchase Depth chart (after appending 2025 data)

Repeat Purchase Depth (2+, 3+, 4+)

— Repeat 2 Plus — Repeat 3 Plus — Repeat 4 Plus

    c. Repeat depth trend (2+, 3+, 4+)

- The highest share of customers reaching three or more orders is observed in February 2024 (54.43%), February 2025 (46.88%), and June 2025 (52.63%).

- This indicates that strong repeat purchase behavior occurs in specific cohorts rather than following a uniform trend over time.

- Deep repeat behavior (four or more orders) appears across multiple cohorts between January 2024 and June 2025.

- However, it does not occur at consistently high levels, suggesting that highly loyal customers exist but represent a relatively small portion of the overall customer base.

- **Recommendation:** implement tiered loyalty programs that reward customers as they move from 2+ to 3+ and 4+ purchases.

Cohort Analysis Overview (Before and After the Incremental Update)

Before the incremental update, the cohort analysis was based exclusively on 2024 data. At this stage, the charts provided an initial view of customer acquisition patterns, early retention to the second purchase, and repeat purchase depth. While these insights were useful, they were limited by cohort maturity, as many customers had not yet had enough time to make repeat purchases.

After appending the 2025 data, the cohort charts extend the analysis across a longer time horizon. This update allows for a more robust interpretation of retention and repeat behavior, while also revealing how more recent cohorts behave differently due to shorter observation windows.

Changes in Customer Behavior Over Time

Acquisition: Customer acquisition peaks in early 2024 and then shows a clear downward trend over time. By December 2025, the number of new customers decreases significantly, reaching only 13 new customers. This indicates weakening acquisition momentum across the period.

Retention: Retention to the second purchase improves for cohorts where customers make their second order within the first 2–3 months. Several cohorts in 2024 and early 2025 show relatively strong retention, while later cohorts display lower values, largely due to limited time to generate repeat purchases.

Repeat Purchase Depth: Repeat purchase depth (2+, 3+, and 4+ orders) varies across cohorts. Certain cohorts, such as February 2024, February 2025, and June 2025, stand out with a higher share of customers reaching three or more purchases. Deep repeat behavior (4+ orders) appears consistently across multiple cohorts, suggesting the presence of a loyal customer segment.

Impact of Adding 2025 Data

The inclusion of 2025 data confirms and strengthens earlier observations rather than reversing them. Acquisition decline becomes more evident, while retention and repeat depth patterns remain relatively stable for mature cohorts. However, recent cohorts naturally appear weaker in retention metrics due to insufficient time since their first purchase.

Assumptions and Limitations

- Recent cohorts are affected by **cohort maturity** and should not be directly compared with older cohorts.

- Retention metrics depend on sufficient time windows to observe second purchases.

- The analysis focuses on behavioral outcomes and does not account for external drivers such as marketing spend, seasonality, or pricing changes.

Summary Insight

Overall, the cohort analysis suggests that while customer acquisition volume is declining, customer quality remains strong among retained users. The data highlights the importance of retention, early repeat purchases, and long-term customer value as key drivers of sustainable growth.