1. Order and Sales Analysis

Insights:

- Order Status Distribution:
  - Orders are evenly distributed across statuses: pending (33.79%), delivered (33.71%), and shipped (32.49%).
  - This balance suggests a steady workflow but potential for optimization in order fulfillment.
- Sales by Order Status:
  - Delivered orders account for $1,284,616.01 in sales with an average order value of $254.03.
  - Pending orders total $1,278,400.04 with an average order value of $252.20.
  - Shipped orders represent $1,245,883.14 with an average order value of $255.62.
- Monthly Sales Trends:
  - Highest performing months by order volume are concentrated in Q1 and Q3.
  - Monthly sales demonstrate seasonal patterns with stronger performance in summer and post-holiday periods.
- Year-over-Year Comparison:
  - Sales have shown modest growth from 2020 ($716,659.46) to 2023 ($735,218.44).
  - Average order values have remained relatively stable between $251-$259 across years.

Recommendations:

1. **Order Processing Optimization:** Implement process improvements to reduce the high percentage (33.79%) of pending orders. Establish KPIs for converting pending orders to shipped status within 24-48 hours.
2. **Seasonal Sales Strategy:** Capitalize on identified peak sales periods (Q1 and Q3) with targeted marketing campaigns. Increase inventory levels ahead of peak periods (January, June-August) to prevent stockouts.

2. Customer Analysis

Insights:

- Customer Loyalty and Repeat Business:
  - Most customers (2,932) have only placed a single order.
  - The loyalty distribution decreases sharply:
    - 2 orders: 2,303 customers
    - 3 orders: 1,283 customers
    - 4 orders: 558 customers
    - 5+ orders: 258 customers
  - The most loyal customer (ID: 2633) has placed 8 orders over 1,019 days, spending $1,716.54.
- Customer Value:
  - Average lifetime value of repeat customers (4+ orders) is substantially higher than one-time purchasers.
  - Long customer relationships (1,200+ days) correlate with higher total spending.

Recommendations:

1. **First-Time Customer Conversion:** Develop a focused "second purchase" program offering special incentives for first-time buyers to make a second purchase within 90 days, directly addressing the large segment of 2,932 single-purchase customers.

2. **Tiered Loyalty Recognition:** Implement a simple two-tier loyalty program that provides increasing benefits for customers who reach 3+ purchases, with premium recognition for the 258 customers who have made 5+ orders.

3. Payment Analysis
Insights:
- Payment Method Performance:
  - Three payment methods show similar usage: bank transfer (5,105 transactions), credit card (4,976 transactions), and PayPal (4,919 transactions).
  - Success rates vary significantly but all are concerning:
    - PayPal: 34.42% success rate
    - Credit card: 33.42% success rate
    - Bank transfer: 32.03% success rate
- Payment Status Distribution:
  - Failed payments represent a significant portion of transaction volume and value ($1,273,618.69).
- Customer Payment Preferences:
  - 44.73% of customers (2,625 out of 5,869) exclusively use a single payment method.

Recommendations:
1. **Payment Processing Enhancement:** Conduct an urgent audit of payment processing systems to address the concerning success rates (all below 35%). Prioritize improvements to PayPal processing, which shows the highest potential (34.42% success).
2. **Failed Payment Recovery:** Develop a systematic recovery strategy for the $1,273,618.69 in failed payments, including automated follow-up within 24 hours of payment failure and offering alternative payment methods.

4. Customer Retention Analysis
Insights:
- Average Retention Rate by Cohort Month is highest at 2025-02 (188.05) and lowest at 2020-01 (30.43).
- The Percentage Sum Retention rate by Cohort month is highest at 2020-01 (2.26%) and lowest at 2025-0 (0.85%).
- Recent cohorts show stronger initial retention rates compared to older cohorts.
- Long-term retention diminishes significantly across all customer cohorts over time.

Recommendations:
1. **Cohort-Based Engagement Strategy:** Develop targeted retention initiatives for different customer cohorts, with special focus on the recent high-performing 2025 cohorts to maintain their exceptional retention rates.
2. **Lapsed Customer Reactivation:** Create a specialized reactivation campaign for older cohorts (especially 2020 cohorts) with personalized offers based on their historical purchase patterns to improve their low retention rates.