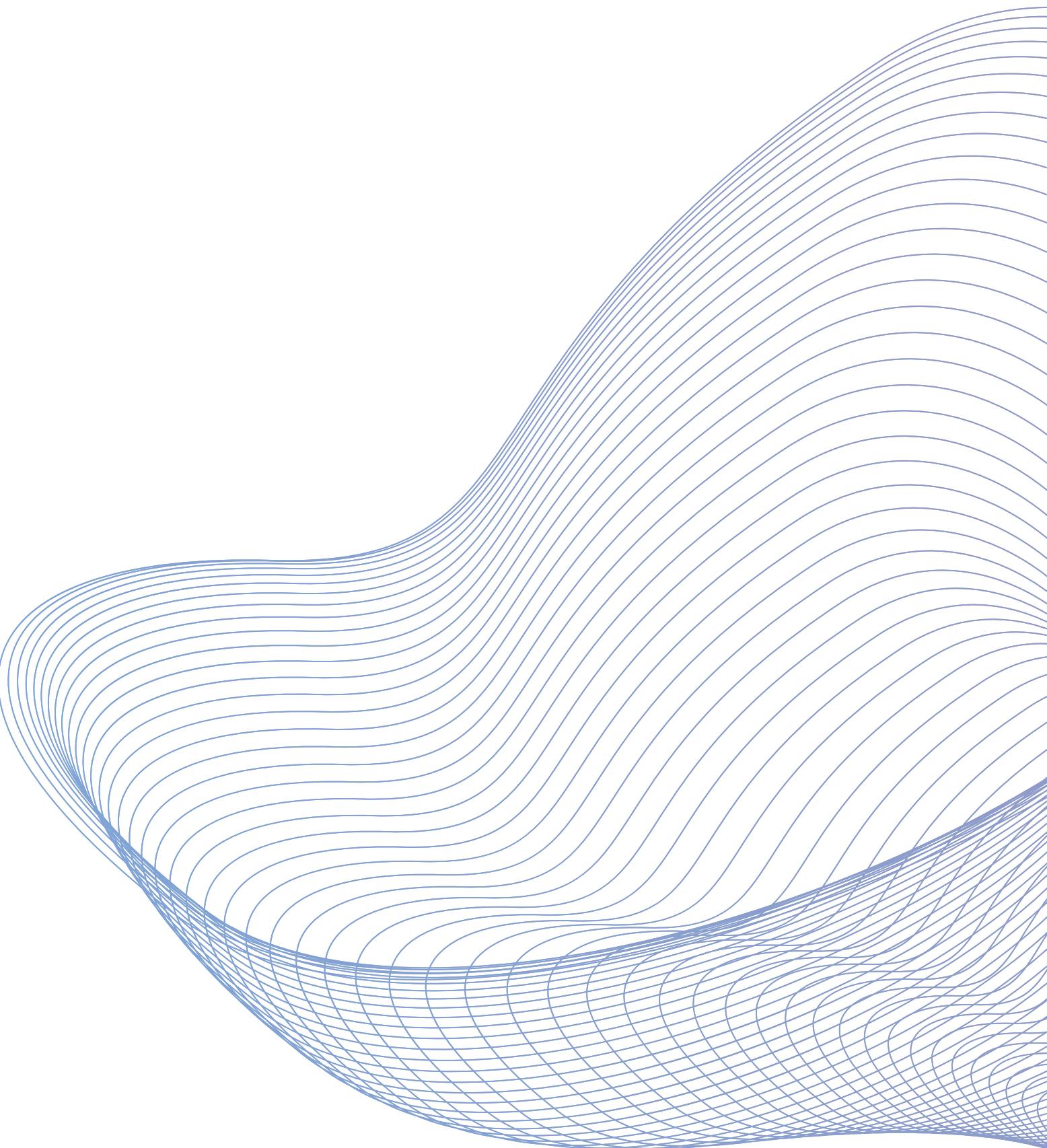


SQL AND DATABASES:

PROJECT REPORT



BUSINESS OVERVIEW

TOTAL REVENUE

48.61 M

TOTAL ORDERS

1000

TOTAL CUSTOMERS

994

AVERAGE RATING

3.14

Last Qtr Revenue

8.57 M

Last Qtr Orders

199

Avg Days to Ship

98

% Good Feedback

44.1 %

CUSTOMER METRICS:

- DISTRIBUTION OF CUSTOMERS ACROSS STATES
- AVERAGE CUSTOMER RATINGS BY QUARTER
- TREND OF CUSTOMER SATISFACTION
- TOP VEHICLE MAKERS PREFERRED BY CUSTOMERS
- MOST PREFERRED VEHICLE MAKE IN EACH STATE

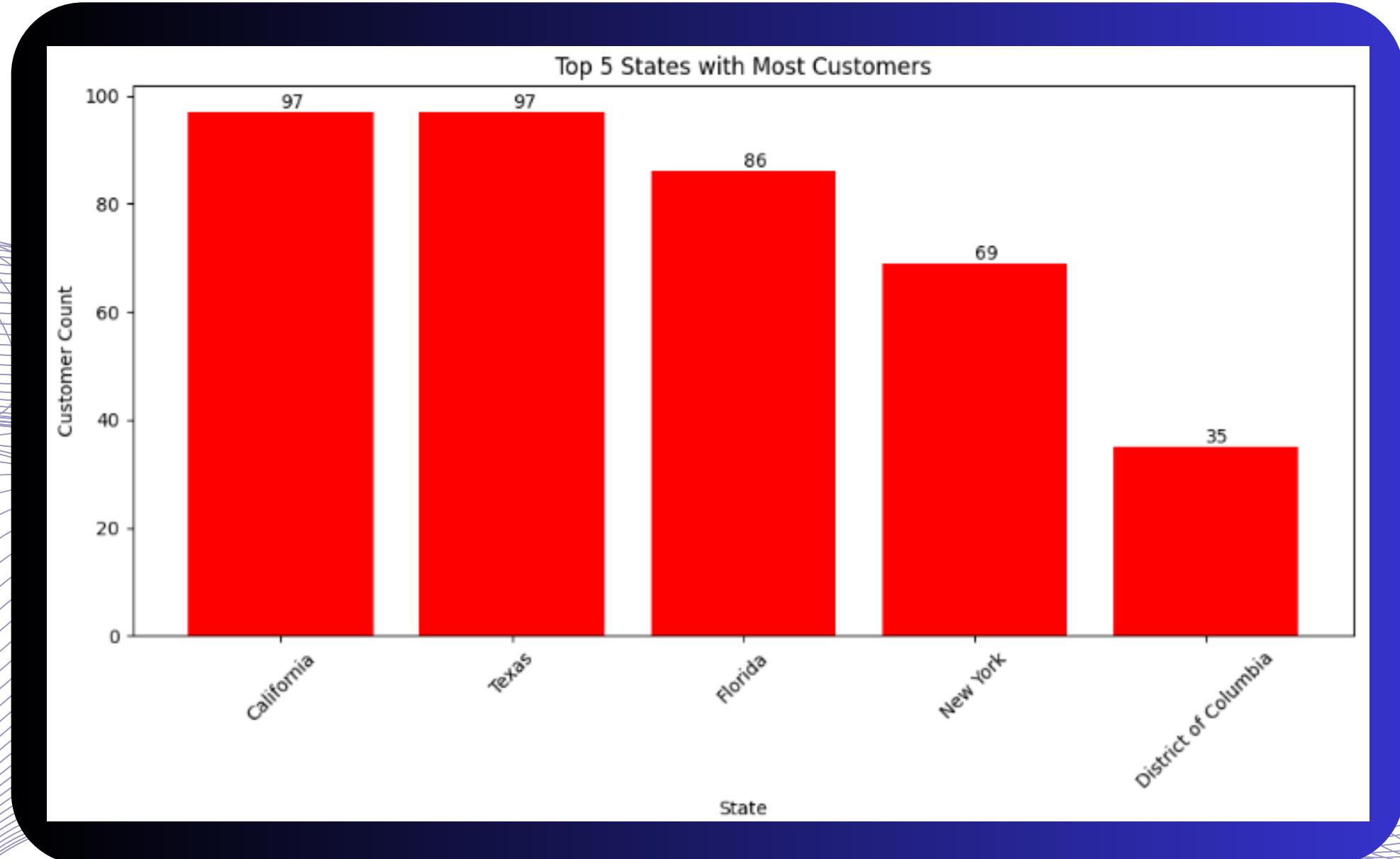


DISTRIBUTION OF CUSTOMERS ACROSS STATES

state	customers_across_states	percentage_of_total
California	97	9.758551
Texas	97	9.758551
Florida	86	8.651911
New York	69	6.941650
District of Columbia	35	3.521127

LINK: [Distribution of customers across states](#)

DISTRIBUTION OF CUSTOMERS ACROSS STATES



- California and Texas lead with 97 customers and approximately 9.76% of the total customer base each.
- Florida and New York too have significant number of customers with 86 and 69 customers respectively contributing 8.65% and 6.94% customers respectively.
- District of Columbia has comparatively less number of customers (35) which is quite low compared to the top 4 states.
- The top 5 states combined contribute approximately one-third of the total number of customers.

AVERAGE CUSTOMER RATINGS BY QUARTER



AVERAGE CUSTOMER RATINGS BY QUARTER

Quarter Number	Average Customer Rating
1	3.5548
2	3.3550
3	2.9563
4	2.3970



- **Average customer ratings showcase a declining trend across quarters. The drop from Q1 to Q4 suggests decreasing customer satisfaction over time.**
- **Q1 exhibits the highest average rating of 3.55 which is between Okay and Good.**
- **Q2 exhibits a drop in average rating to 3.36, which is also between Okay and Good.**
- **By Q3, the rating drops below 3 and by Q4, we see a further decline to 2.4 which is between Bad and Okay and suggests overall customer dissatisfaction.**

TREND OF CUSTOMER SATISFACTION

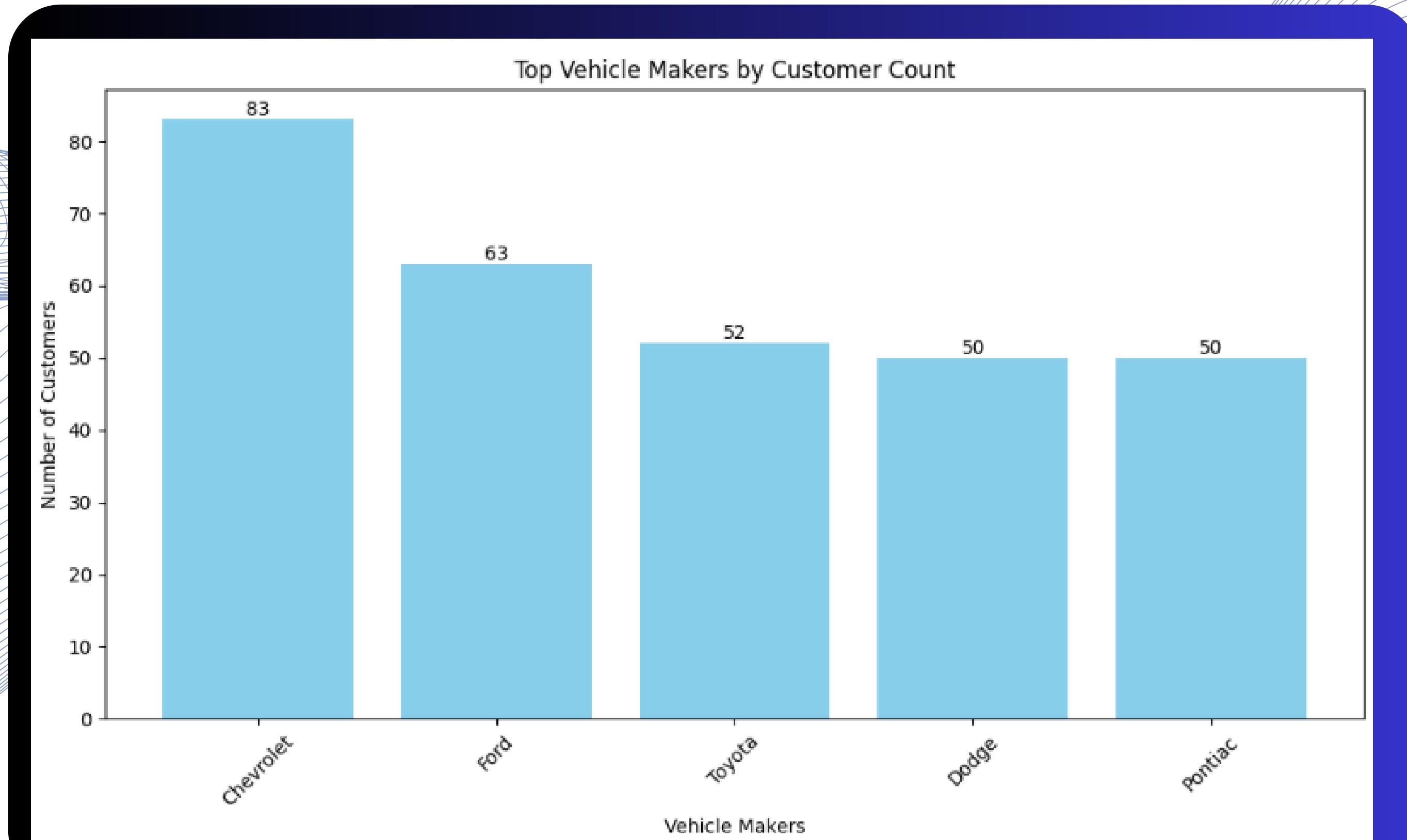


TREND OF CUSTOMER SATISFACTION

quarter	percentage_very_bad	percentage_bad	percentage_okay	percentage_good	percentage_very_good
1	10.9677	11.2903	19.0323	28.7097	30.0000
2	14.8855	14.1221	20.2290	22.1374	28.6260
3	17.9039	22.7074	21.8341	20.9607	16.5939
4	30.6533	29.1457	20.1005	10.0503	10.0503

- The percentage of "Very Bad" feedback increases significantly from the first to the fourth quarter, indicating deteriorating customer experiences over time.
- Conversely, the percentage of "Good" and "Very Good" feedback decreases as the quarters progress, suggesting a decline in overall customer satisfaction.
- In the fourth quarter, "Very Bad" and "Bad" feedback combined constitute the majority (59 %), highlighting a critical issue that needs urgent attention.
- The third quarter shows a substantial increase in "Bad" feedback compared to the previous quarters, while fourth quarter showed a substantial increase in "Very Bad" feedback.
- These trends underscore the importance of promptly addressing issues contributing to negative feedback and implementing strategies to enhance overall customer satisfaction.

TOP VEHICLE MAKERS PREFERRED BY CUSTOMERS



TOP VEHICLE MAKERS PREFERRED BY CUSTOMERS

Vehicle Maker	Customer Count
Chevrolet	83
Ford	63
Toyota	52
Dodge	50
Pontiac	50

- Chevrolet appears to be the top vehicle maker preferred by customers with 83 customers.
- Ford is second with 63 customers.
- Toyota, Dodge and Pontiac occupy the 3rd, 4th and 5th positions and have 52, 50 and 50 customers respectively.

MOST PREFERRED VEHICLE MAKER IN EACH STATE

State	Preferred Vehicle Makers	Customer Count
Alabama	Dodge	5
Alaska	Chevrolet	2
Arizona	Cadillac, Pontiac	3
Arkansas	Chevrolet, GMC, Mitsubishi, Pontiac, Suzuki, Volkswagen	1
California	Audi, Chevrolet, Dodge, Ford, Nissan	6
Colorado	Chevrolet	5
Connecticut	Chevrolet, Maserati, Mercury, Volvo	2
Delaware	Mitsubishi	2
District of Columbia	Chevrolet	4
Florida	Toyota	7
Georgia	Toyota	3
Hawaii	Cadillac, Ford, GMC, Nissan, Pontiac, Toyota	1
Idaho	Dodge	2
Illinois	Chevrolet, GMC, Ford	3
Indiana	Mazda	4

LINK: [Preferred vehicle members in each state](#)

MOST PREFERRED VEHICLE MAKER IN EACH STATE

State	Preferred Vehicle Makers	Customer Count
Iowa	Chevrolet, Chrysler, Dodge, Ford, Hyundai, Isuzu, Jeep, Mazda, Pontiac, Porsche, Subaru	1
Kansas	Buick, Dodge, Ford, GMC, Honda, Lexus, Maserati, Mazda, Mercedes-Benz, Nissan, Saab, Suzuki, Volkswagen	1
Kentucky	Acura, Audi, Mercedes-Benz, Mercury, Nissan, Pontiac, Ram, Volvo	1
Louisiana	Nissan, BMW, Ford, Pontiac, Kia	2
Maine	Mercedes-Benz	1
Maryland	Ford	5
Massachusetts	Dodge, Chevrolet	2
Michigan	Ford	3
Minnesota	GMC	3
Mississippi	Dodge, Toyota	1
Missouri	Chevrolet	4
Montana	Chevrolet, Dodge, Mitsubishi	1
Nebraska	Cadillac, Chevrolet, Mercedes-Benz, Nissan, Pontiac, Toyota, Volkswagen	1
Nevada	Pontiac	3
New Hampshire	Chrysler, Lexus, Lincoln	1
New Jersey	Hyundai, Mercedes-Benz	2
New Mexico	Dodge	2

LINK: [Preferred vehicle members in each state](#)

MOST PREFERRED VEHICLE MAKER IN EACH STATE

State	Preferred Vehicle Makers	Customer Count
New York	Toyota, Pontiac	5
North Carolina	Volvo	3
North Dakota	Ford, Hyundai	1
Ohio	Chevrolet	6
Oklahoma	Ferrari, Mazda, Toyota	2
Oregon	Toyota	2
Pennsylvania	Toyota	3
South Carolina	Acura, BMW, Buick, Dodge, Isuzu, Jaguar, Kia, Mazda, Mitsubishi	1
Tennessee	Mazda	3
Texas	Chevrolet	9
Utah	Buick, Chevrolet, Dodge, Isuzu, Lincoln, Maybach, Oldsmobile, Pontiac, Subaru, Volkswagen	1
Vermont	Mazda	1
Virginia	Ford	5
Washington	Chevrolet	5
West Virginia	Mercedes-Benz	2
Wisconsin	Acura, Cadillac, Chevrolet, Dodge, Honda, Mazda, Nissan, Pontiac	1
Wyoming	Buick	1

LINK: [Preferred vehicle members in each state](#)

MOST PREFERRED VEHICLE MAKER IN EACH STATE

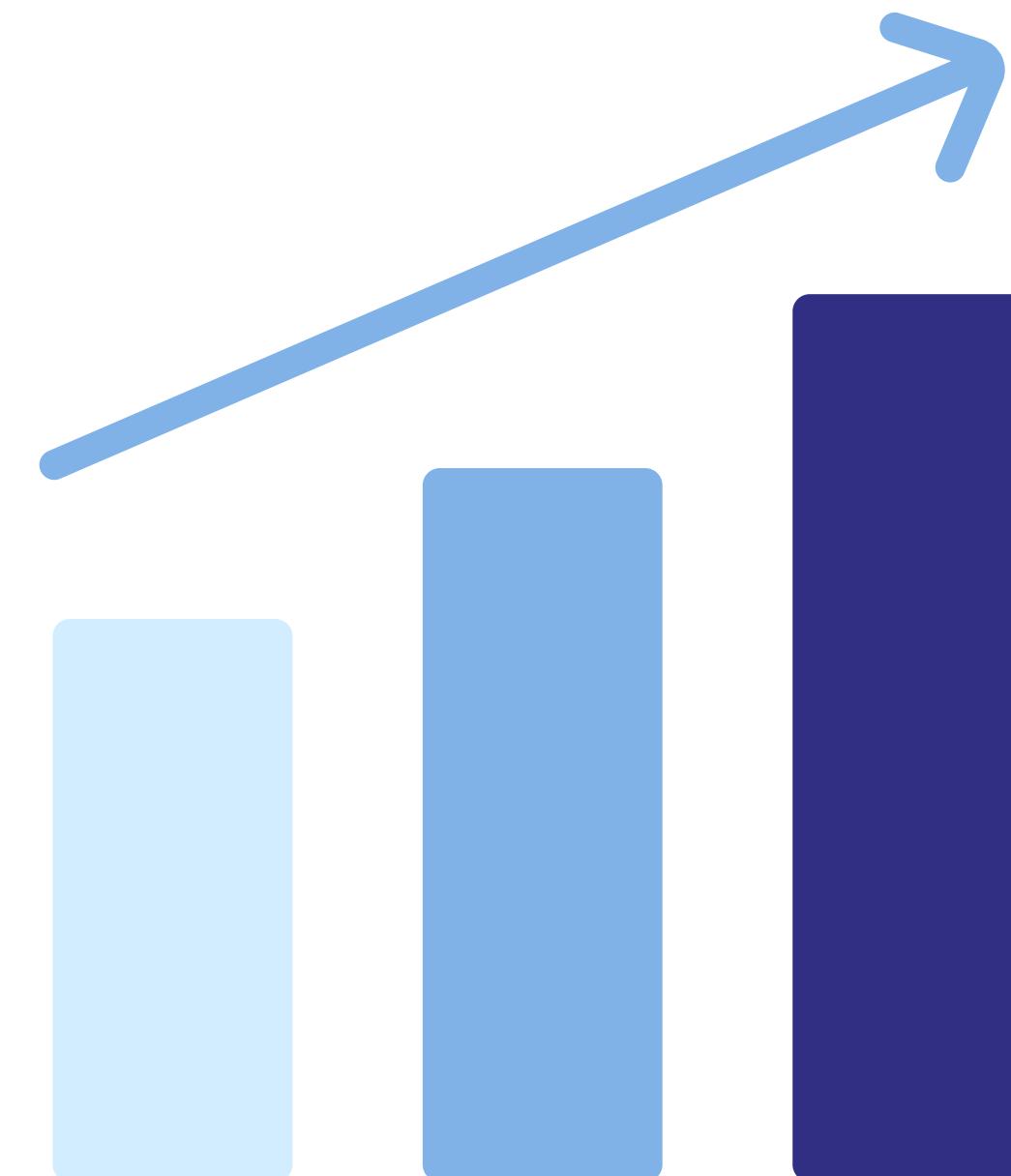
INSIGHTS/ OBSERVATIONS:

- The table provides insights into the most preferred vehicle maker in different states based on customer counts.
- There are variations in preferred vehicle makers across different states. For example, in Texas, Chevrolet appears to be the most preferred, whereas in Florida, Toyota has the highest customer count.
- Some vehicle makers appear to be popular across multiple states, such as Chevrolet, Toyota, Ford, and Dodge, indicating their widespread appeal and market presence.
- Some states show a diverse range of preferred vehicle makers, with customers opting for multiple brands. For instance, in Hawaii, customers prefer Cadillac, Ford, GMC, Nissan, Pontiac, and Toyota.

LINK: [Preferred vehicle members in each state](#)

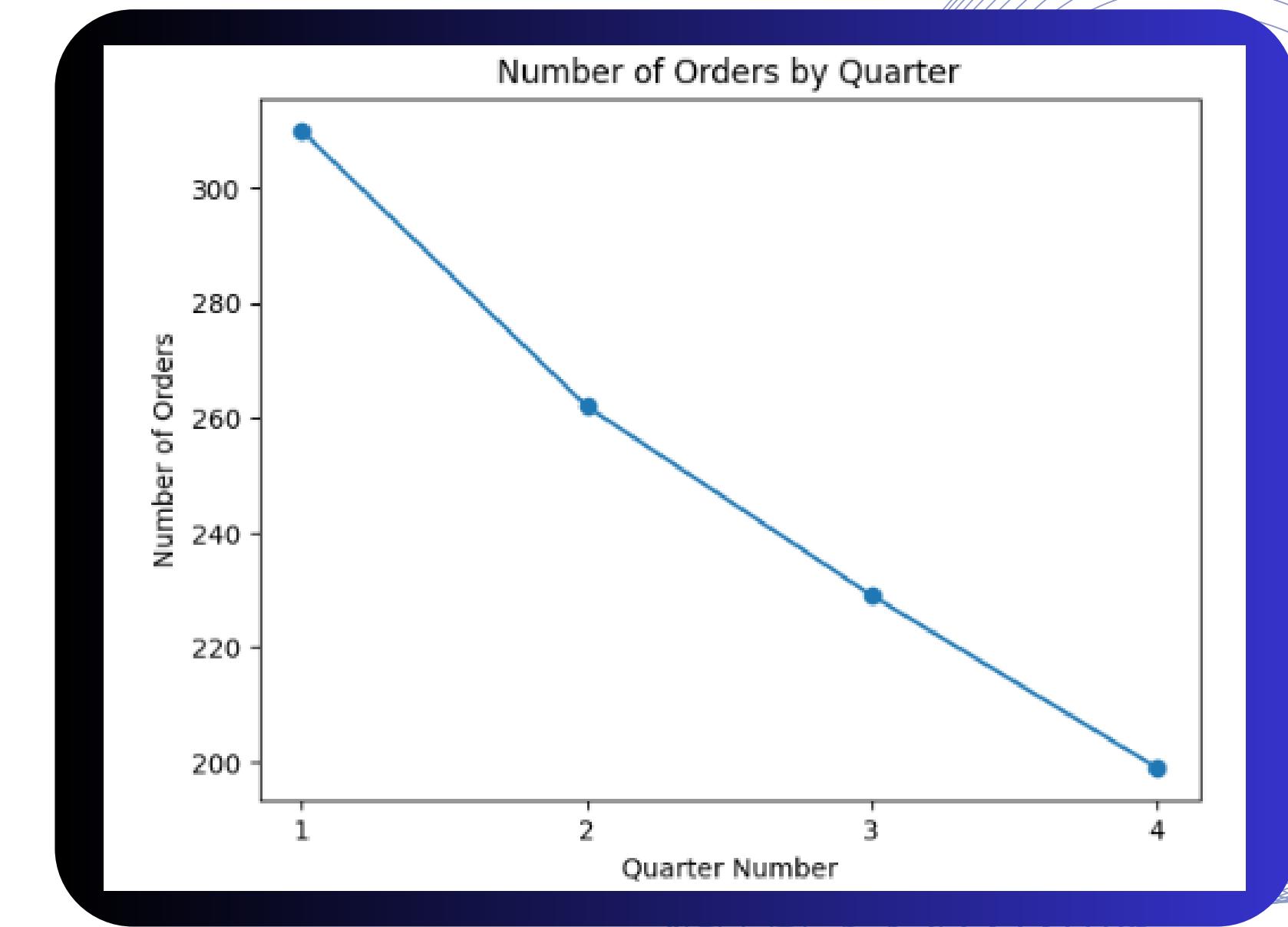
REVENUE METRICS:

- TREND OF PURCHASES BY QUARTER
- QUARTER ON QUARTER % CHANGE IN REVENUE
- TREND OF REVENUE AND ORDERS BY QUARTER



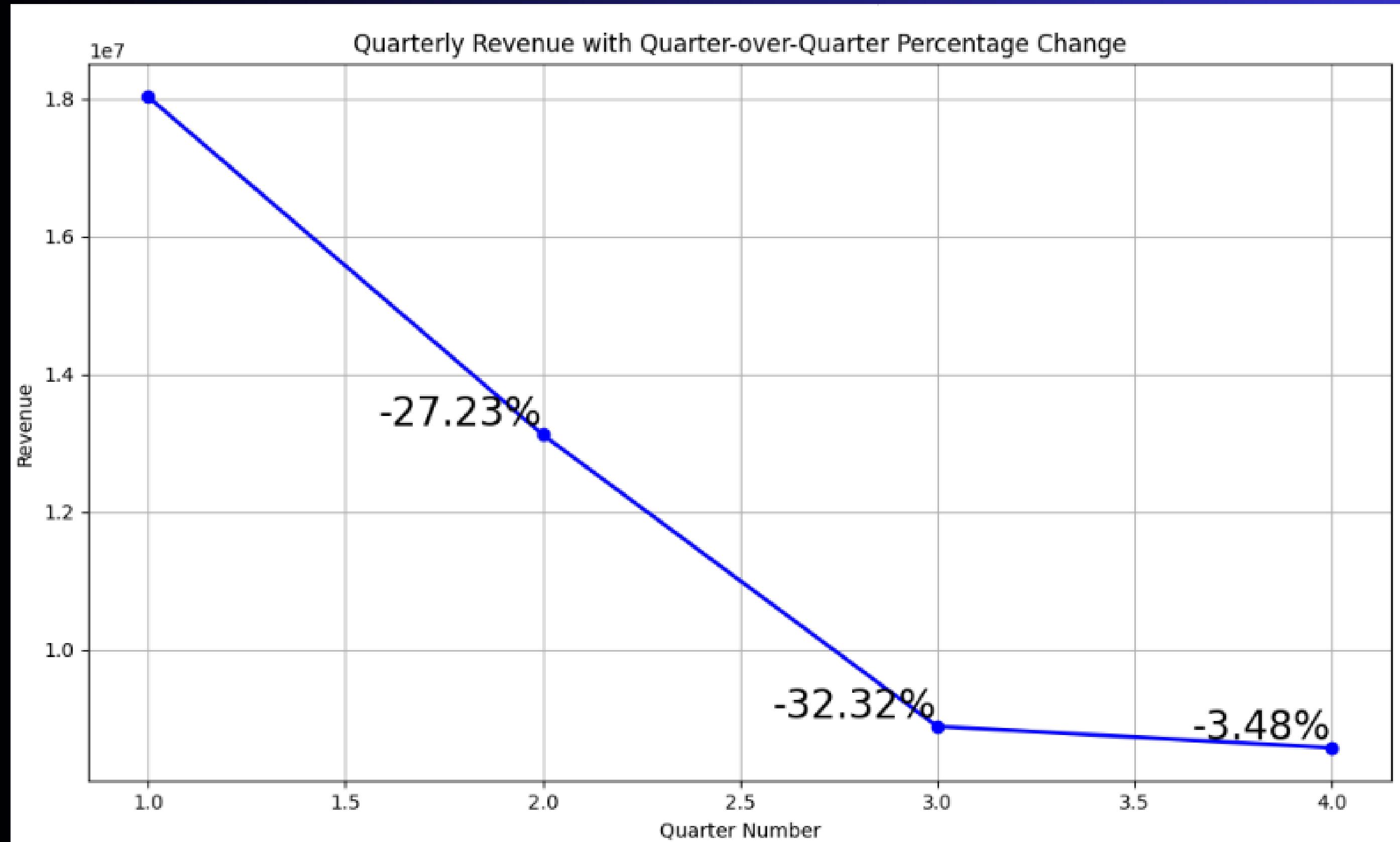
TREND OF PURCHASES BY QUARTER

Quarter_number	Num_orders
1	310
2	262
3	229
4	199



- The purchases data showcase a declining trend.
- The number of orders are 310 in Q1 and drops to 263 in Q2.
- By Q3, the number of orders drop to 229 and by Q4, the number drops to 199, which signifies a significant drop.

QUARTER ON QUARTER % CHANGE IN REVENUE

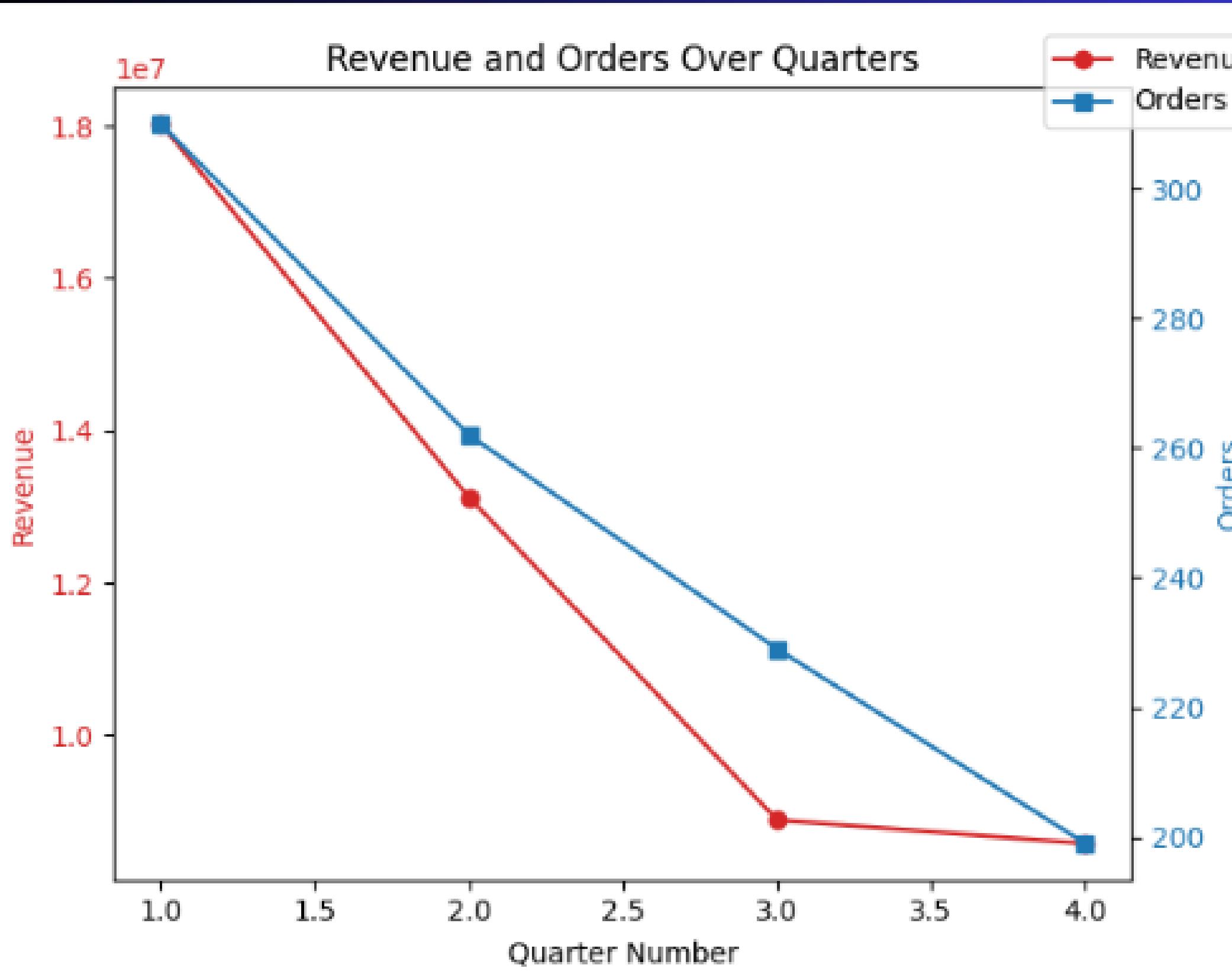


QUARTER ON QUARTER % CHANGE IN REVENUE

Quarter_no	total_revenue	qoq_percentage_change
0	1.803255e+07	NaN
1	1.312300e+07	-27.226067
2	8.882299e+06	-32.315006
3	8.573149e+06	-3.480513

- The percentage change from Quarter 1 to Quarter 2 indicates a significant decrease in revenue, followed by a further decrease from Quarter 2 to Quarter 3, showing a consistent downward trend.
- However, the percentage change from Quarter 3 to Quarter 4 shows a smaller decline compared to the previous quarters, suggesting a potential stabilization in the declining trend.

TREND OF REVENUE AND ORDERS BY QUARTER



TREND OF REVENUE AND ORDERS BY QUARTER

Quarter_number	total_revenue	num_orders
0	1.803255e+07	310
1	1.312300e+07	262
2	8.882299e+06	229
3	8.573149e+06	199

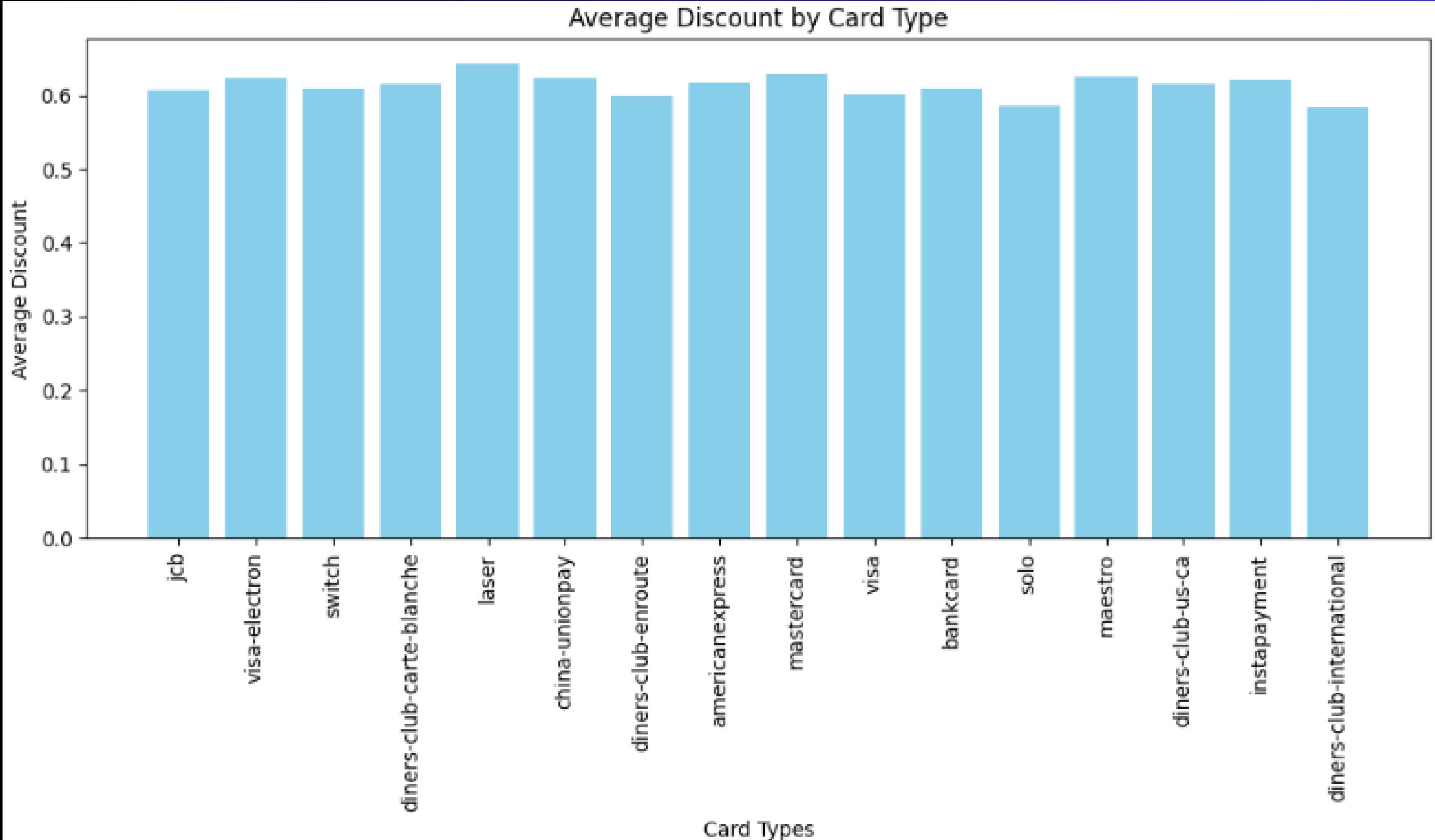
- Revenue and orders decline consistently from the first to the fourth quarter.
- There's a noticeable drop in revenue from \$18,032,549.90 to \$8,573,149.28.
- The number of orders decreases from 310 to 199 over the observed period.
- Both revenue and orders show a correlated downward trend, indicating that declining revenue is due to decrease in orders, which in turn may be the result of increased dissatisfaction among customers.

SHIPPING METRICS:

- AVERAGE DISCOUNT OFFERED BY CREDIT CARD TYPE
- TIME TAKEN TO SHIP ORDERS BY QUARTER



AVERAGE DISCOUNT OFFERED BY CREDIT CARD TYPE

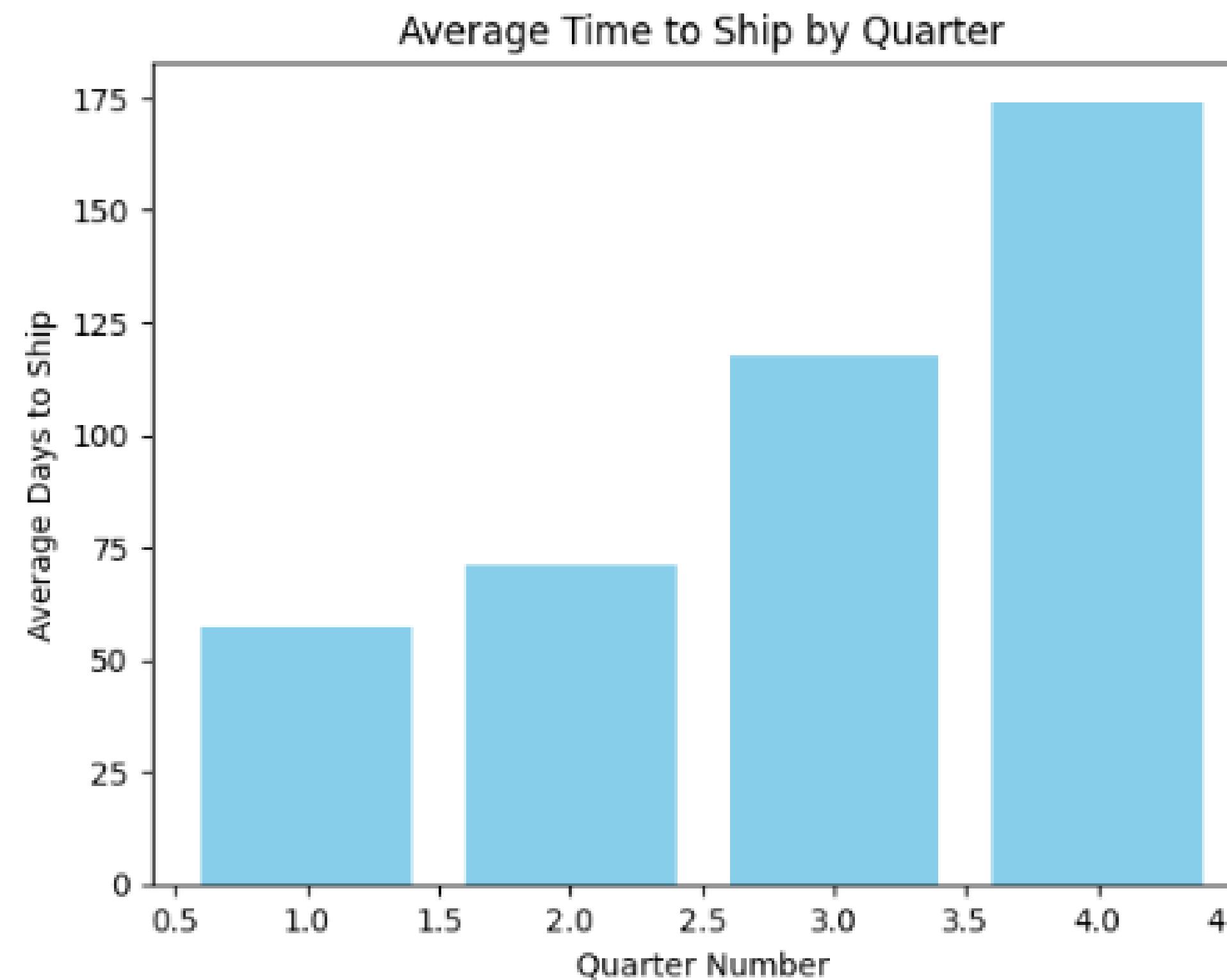


AVERAGE DISCOUNT OFFERED BY CREDIT CARD TYPE

Card Type	Average Discount
jcb	0.607382
visa-electron	0.623469
switch	0.610233
diners-club-carte-blanche	0.614490
laser	0.643846
china-unionpay	0.622174
diners-club-enroute	0.599792
americanexpress	0.616327
mastercard	0.629500
visa	0.600833
bankcard	0.609545
solo	0.585000
maestro	0.624219
diners-club-us-ca	0.614615
instapayment	0.620625
diners-club-international	0.584000

- The average discount for credit card types range from 0.584 to 0.644.
- "laser" has the highest average discount offered, with a average discount of 0.643846.
- "diners-club-international" has the lowest average discount, with average discount of 0.584.
- Overall, there is not much variability in the average discount rates among different credit card types.

TIME TAKEN TO SHIP ORDERS BY QUARTER



TIME TAKEN TO SHIP ORDERS BY QUARTER

quarter_number	Avg_days_to_ship
1	57.1677
2	71.1107
3	117.7555
4	174.0955

- In Quarter 1, the average days to ship an order were approximately 57.17 and in Quarter 2, it saw an increase in the average days to ship to around 71.11.
- The average days to ship surged significantly in Quarter 3 to approximately 117.76.
- By Quarter 4, the average days to ship further increased to about 174.10, which is a 200% jump compared to that in Quarter 1.

- There is a clear upward trend in the average days to ship over the quarters, indicating potential challenges or inefficiencies in the shipping process.
- This may also be a critical factor resulting in increasing dissatisfaction among customers and in turn resulting in declining revenue.

INSIGHTS:

- Average customer ratings have been consistently decreasing.
- Distribution of customer ratings indicate decreasing Good and Very Good ratings and increasing Bad and Very Bad ratings.
- Both these trends indicate decreasing customer satisfaction.
- This trend is supported with decrease in total orders and in turn total revenue, which is caused due to increasing customer dissatisfaction.
- Detailed analysis indicates that average days to ship orders have increased by 3 times in Quarter 4 compared to that in Quarter 1, which may be a critical factor in decreasing customer satisfaction and hence in turn declining revenue for the company.

RECOMMENDATIONS:

- Prioritize customer satisfaction by enhancing after-sales support and addressing feedback promptly.
- Implement targeted marketing campaigns and promotional offers to stimulate sales and attract new customers, as well as reach out old customers.
- Investigate and identify the root cause for increase in shipping time and address the root cause promptly.
- Invest in logistics optimization to streamline shipping processes and reduce delivery times for improved customer satisfaction.



THANK YOU!