SQL

BUSSINESS REPORT

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Table of Contents

BUSSINESS OVERVIEW

TOTAL REVENUE	TOTAL ORDERS	TOTAL CUSTOMERS	AVERAGE RATING
83.12 M	1000	994	3.06%

LAST QUARTER REVENUE (4TH)	LAST QUARTER ORDERS(4TH)	AVERAGE SHIPMENT TIME(4TH QUARTER)	AVERAGE RATING (4TH QUARTER)
15.28 M	199	172.0955	2.3970%

% GOOD FEEDBACK(4TH QUARTER)	% VERY GOOD FEEDBACK(4TH QUARTER)
10.05%	10.05%

CUSTOMER METRICS

Q1) what is the distribution of customers across states?

TOP 5 STATES WITH HIGHEST DISTRIBUTION OF CUSTOMERS

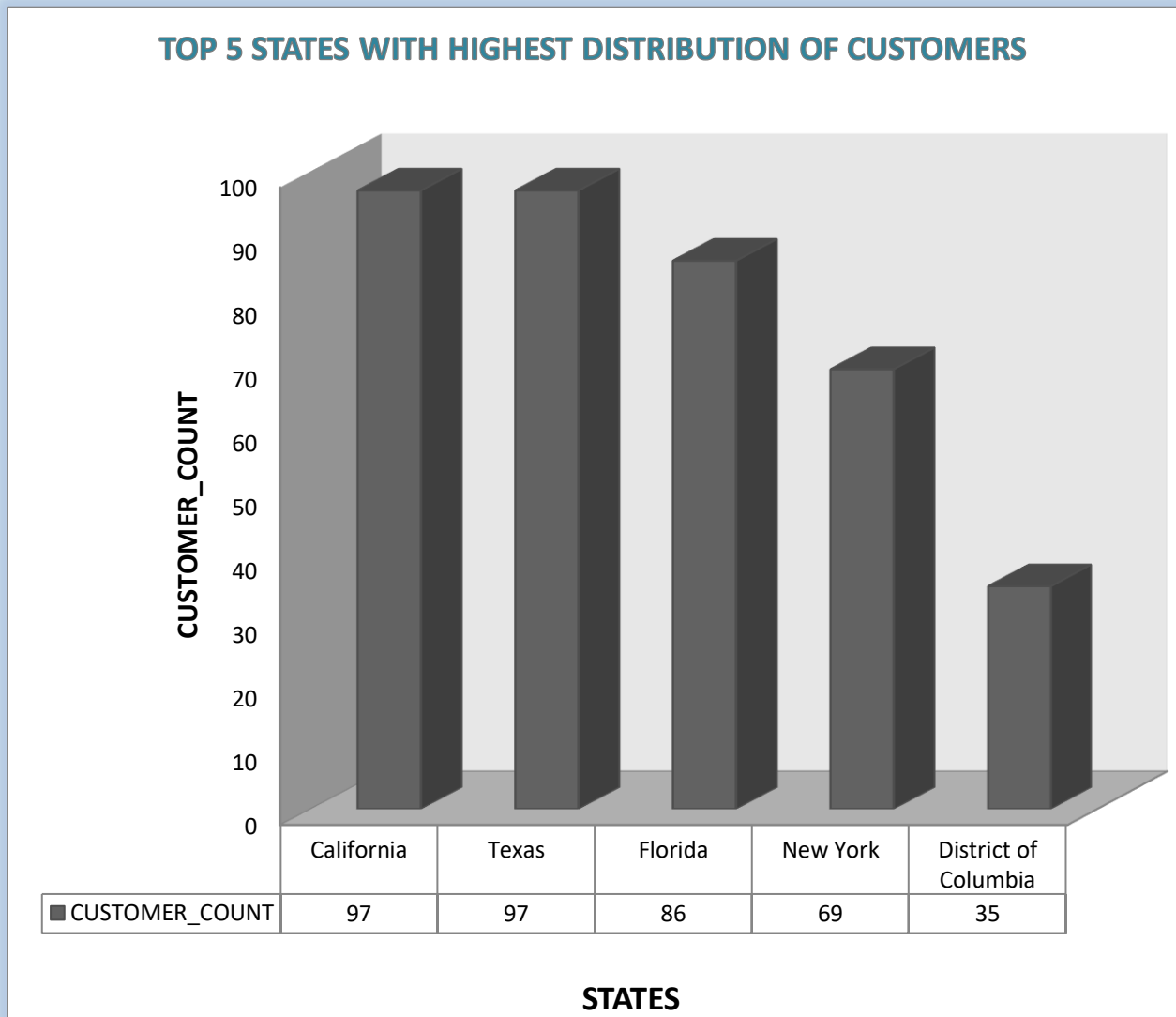|	California	Texas	Florida	New York	District of Columbia
CUSTOMER_COUNT	97	97	86	69	35

STATES

Fig1: Top five states with highest distribution of customers

Observation/Findings:

1. California and Texas have the Highest Customer Counts:

Both California and Texas have the highest number of customers, each with 97 Customers.

2. Florida is the Third Most Populous State:

Florida follows closely with 86 customers, making it the third most populous state in terms of customers.

3. New York is the Fourth Most Populous State:

New York has 69 customers, placing it as the fourth state with the highest Customer count.

4. District of Columbia has a Lower Customer Count:

The District of Columbia has a relatively lower customer count compared to the top states, with 35 customers.
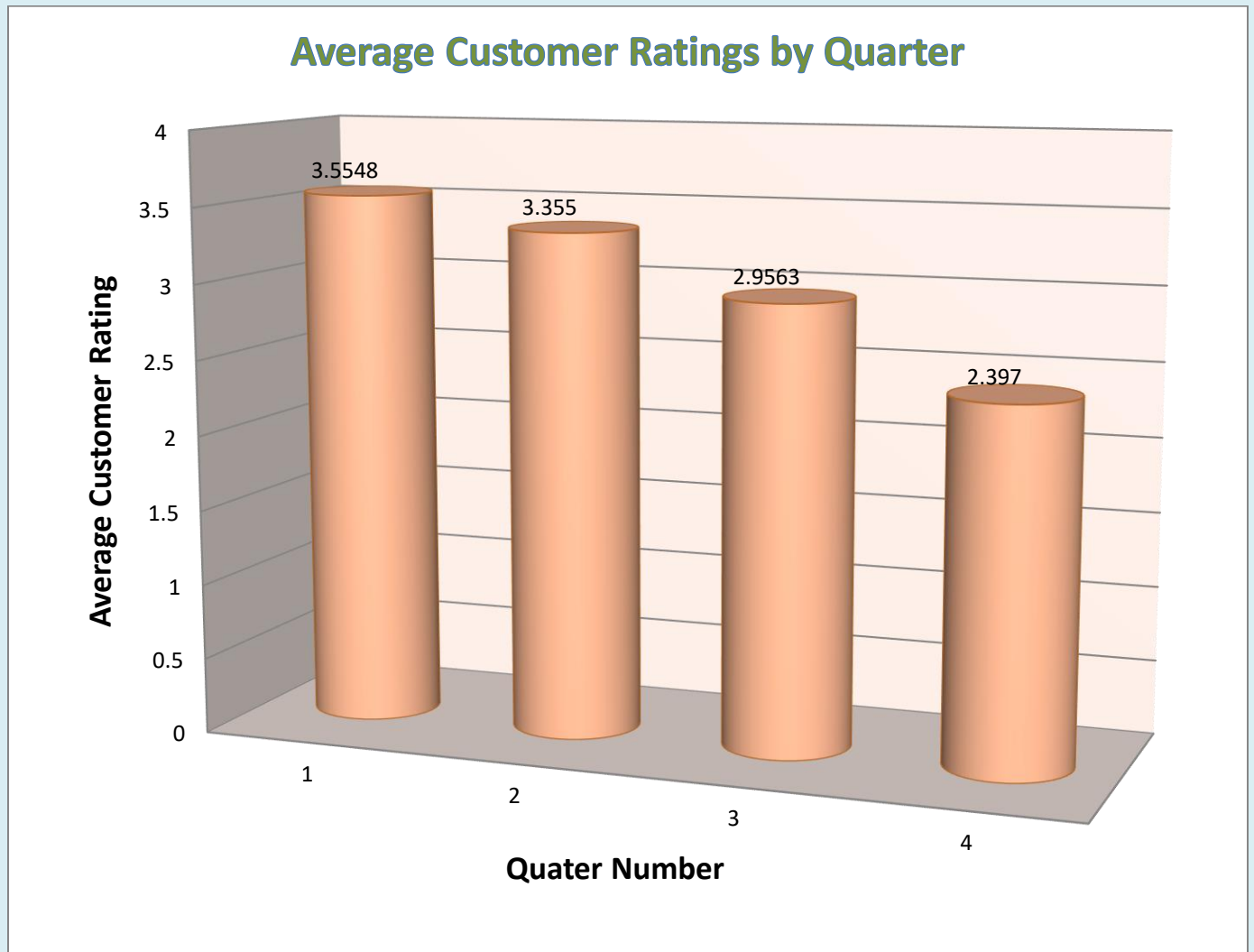
Q2) what is the average rating in each quarter?

Average Customer Ratings by Quarter

3.5548

3.355

2.9563

2.397

Average Customer Rating

Quater Number

Fig 2: Average rating in each quarter

Observation/Findings

1. Declining Trend in Average Ratings across Quarters:

There is a noticeable decline in average ratings as we progress through the quarters. The average rating starts at 3.5548 in the first quarter and gradually decreases in each quarter.

2. Highest Average Rating in the First Quarter:

The first quarter has the highest average rating of 3.5548, suggesting that, on average, the ratings were more positive or higher during the initial.

3. Drop in Ratings from Quarter 1 to Quarter 2:

There is a decrease in the average rating from the first quarter to the second quarter (3.5548 to 3.355). This drop may be indicating a shift in sentiment or satisfaction levels among users.

4. Further Decrease in Ratings in Quarters 3 and 4:

The average ratings continue to decline in the third and fourth quarters, reaching 2.9563 and 2.397. This continued decrease may warn us to do closer examinations of factors influencing customer satisfaction or feedback.

5. Overall Trend Indicates Potential Improvement Areas:

The overall trend of declining average ratings over the course of quarters points to the possibility that customer satisfaction or product/service enhancements require focus. Every quarter, examining certain consumer comments or feedback could give light on areas that need improvement.

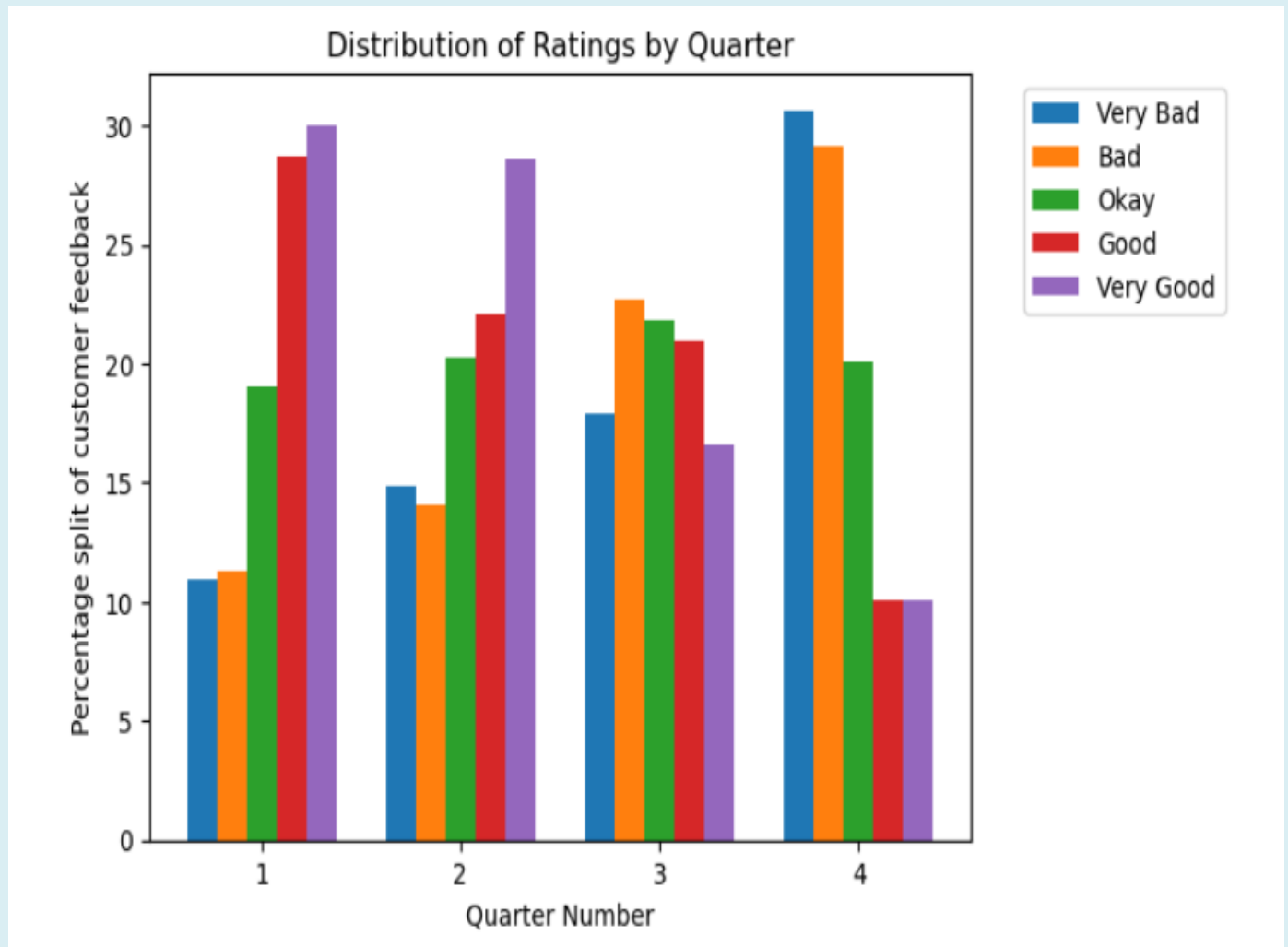## Q3) Are customers getting more dissatisfied over time?

Fig3: Trend of customer satisfaction in Quarter

Observations/Findings

1. Overall Decrease in Customer Satisfaction:

There is a notable decrease in customer satisfaction over the quarters, as evidenced by the increasing percentages of "Very Bad" and "Bad" ratings.

2. Sharp Increase in Dissatisfaction from Quarter 1 to Quarter 4:

The percentage of "Very Bad" ratings increases significantly from 10.97% in Quarter 1 to 30.65% in Quarter 4. This suggests decline in customer satisfaction over time.

3. Consistent Increase in "Bad" Ratings:

The percentage of "Bad" ratings also shows a consistent increase from 11.29% in Quarter 1 to 29.15% in Quarter 4. This trend further indicates a growing dissatisfaction among customers.

4. Decrease in "Good" and "Very Good" Ratings:

The percentages of "Good" and "Very Good" ratings decrease over the quarters. This decline in positive ratings contributes to the overall decrease in customer satisfaction.

5. Shift towards Negative Feedback in Later Quarters:

The combined percentages of "Very Bad" and "Bad" ratings increase from 22.26% in Quarter 1 to 59.80% in Quarter 4. This shift towards negative feedback suggests a potential decline in the quality of customer experiences.

6. Consideration for Improvement:

The data signals a need for careful consideration and investigation into the factors contributing to the decline in customer satisfaction. Gathering more detailed feedback, analyzing customer comments, and identifying specific pain points can provide insights into areas that may require improvement.

Q4) which are the top 5 vehicle makers preferred by the customer.

Top 5 vehicle makers preferred by customers

	Chevrolet	Ford	Toyota	Dodge	Pontiac
customer_count	83	63	52	50	50

Vehicle Makers

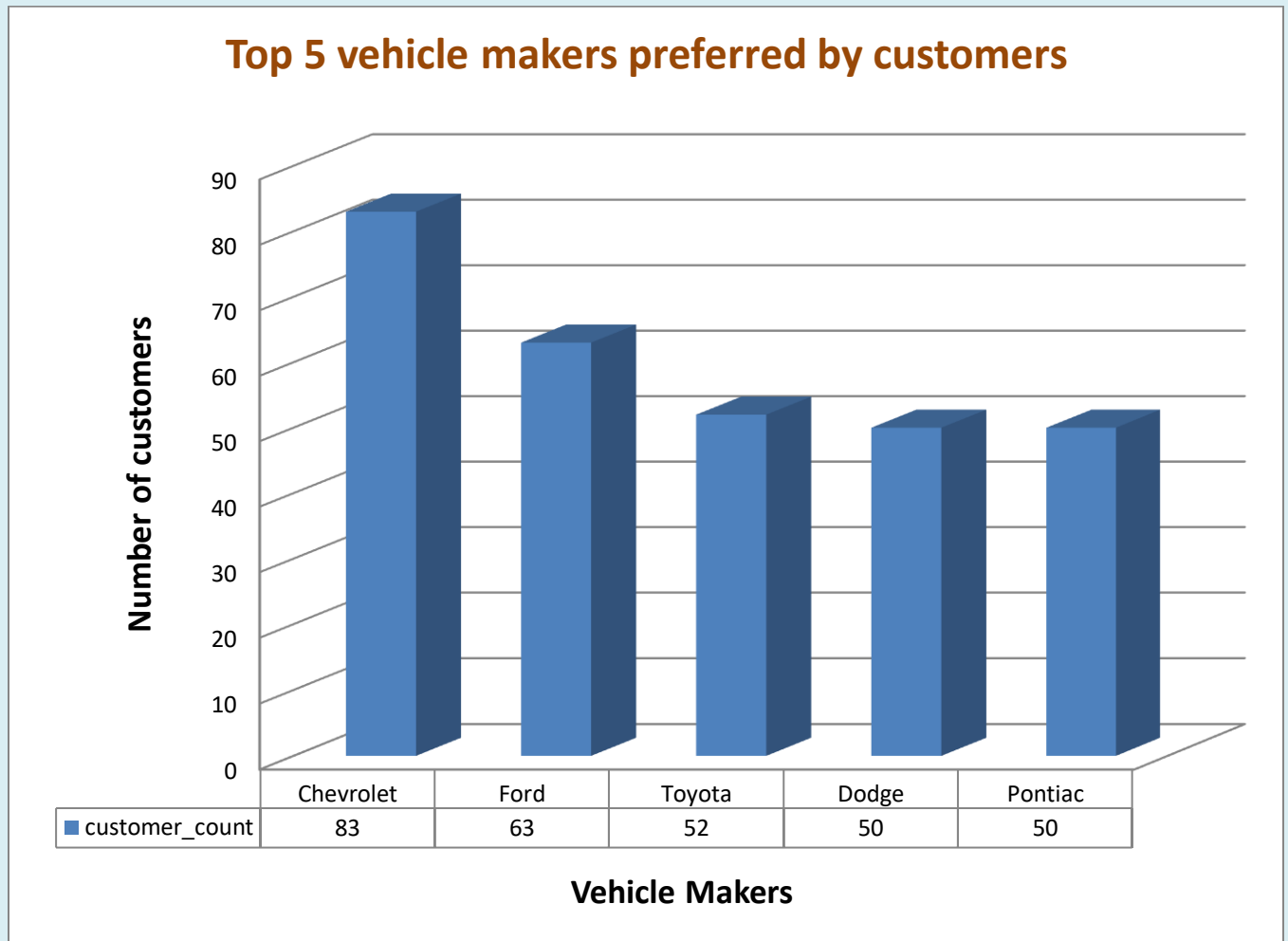*(Y-axis: Number of customers, scaled 0 to 90)*

Fig 4: Top 5 vehicle makers preferred by customers.

Observations/Findings

1. Chevrolet Leads as the Most Preferred Vehicle Maker:

Chevrolet stands out as the top-preferred vehicle maker with the highest customer count of 83. This indicates a strong preference for Chevrolet vehicles among the surveyed customers.

2. Ford as the Second Most Preferred:

 Ford follows closely as the second most preferred vehicle maker, with a customer count of 63. While slightly lower than Chevrolet, Ford remains a popular choice among customers.

3. Toyota Holds a Strong Position:

 Toyota secures the third position among the preferred vehicle makers, with a customer count of 52. This suggests a significant number of customers favoring Toyota vehicles.

4. Tie between Dodge and Pontiac:

Dodge and Pontiac share the fourth position; each with a customer count of 50.This indicates an equal preference for vehicles from these two makers among the surveyed customers.

5. Variety of Preferences across Top 5 vehicle Makers:

The top 5 vehicle makers (Chevrolet, Ford, Toyota, Dodge, and Pontiac) represent a variety of brands and models. This diversity in preferences suggests that customers have different priorities and criteria when selecting their vehicles according their budget and a suitable car for their needs.

6. Considerations for Marketing and Product Strategies:

Understanding the most preferred vehicle makers allows to modify our marketing efforts and focus on the vehicle maker is preferred most by customers.

Q5) What is the most preferred vehicle make in each state?

State	vehicle_maker	customer_count /Most prefered vehicle
Alabama	Dodge	5
Alaska	Chevrolet	2
Arizona	Cadillac	3
Arizona	Pontiac	3
Arkansas	Chevrolet	1
Arkansas	GMC	1
Arkansas	Mitsubishi	1
Arkansas	Pontiac	1
Arkansas	Suzuki	1
Arkansas	Volkswagen	1
California	Audi	6
California	Chevrolet	6
California	Dodge	6
California	Ford	6
California	Nissan	6
Colorado	Chevrolet	5
Connecticut	Chevrolet	2
Connecticut	Maserati	2
Connecticut	Mercury	2
Connecticut	Volvo	2
Delaware	Mitsubishi	2
District of Columbia	Chevrolet	4
Florida	Toyota	7
Georgia	Toyota	3
Hawaii	Cadillac	1
Hawaii	Ford	1
Hawaii	GMC	1
Hawaii	Nissan	1
Hawaii	Pontiac	1
Hawaii	Toyota	1
Idaho	Dodge	2
Illinois	Chevrolet	3
Illinois	GMC	3
Illinois	Ford	3
Indiana	Mazda	4
Iowa	Chevrolet	1
Iowa	Chrysler	1

State	vehicle_maker	customer_count /Most prefered vehicle
Iowa	Dodge	1
Iowa	Ford	1
Iowa	Hyundai	1
Iowa	Isuzu	1
Iowa	Jeep	1
Iowa	Mazda	1
Iowa	Pontiac	1
Iowa	Porsche	1
Iowa	Subaru	1
Kansas	Buick	1
Kansas	Dodge	1
Kansas	Ford	1
Kansas	GMC	1
Kansas	Honda	1
Kansas	Lexus	1
Kansas	Maserati	1
Kansas	Mazda	1
Kansas	Mercedes-Benz	1
Kansas	Nissan	1
Kansas	Saab	1
Kansas	Suzuki	1
Kansas	Volkswagen	1
Kentucky	Acura	1
Kentucky	Audi	1
Kentucky	Mercedes-Benz	1
Kentucky	Mercury	1
Kentucky	Nissan	1
Kentucky	Pontiac	1
Kentucky	Ram	1
Kentucky	Volvo	1
Louisiana	Nissan	2
Louisiana	BMW	2
Louisiana	Ford	2
Louisiana	Pontiac	2
Louisiana	Kia	2
Maine	Mercedes-Benz	1
Maryland	Ford	5
Massachusetts	Dodge	2
Massachusetts	Chevrolet	2

State	vehicle_maker	customer_count /Most prefered vehicle
Michigan	Ford	3
Minnesota	GMC	3
Mississippi	Dodge	1
Mississippi	Toyota	1
Missouri	Chevrolet	4
Montana	Chevrolet	1
Montana	Dodge	1
Montana	Mitsubishi	1
Nebraska	Cadillac	1
Nebraska	Chevrolet	1
Nebraska	Mercedes-Benz	1
Nebraska	Nissan	1
Nebraska	Pontiac	1
Nebraska	Toyota	1
Nebraska	Volkswagen	1
Nevada	Pontiac	3
New Hampshire	Chrysler	1
New Hampshire	Lexus	1
New Hampshire	Lincoln	1
New Jersey	Hyundai	2
New Jersey	Mercedes-Benz	2
New Mexico	Dodge	2
New York	Toyota	5
New York	Pontiac	5
North Carolina	Volvo	3
North Dakota	Ford	1
North Dakota	Hyundai	1
Ohio	Chevrolet	6
Oklahoma	Ferrari	2
Oklahoma	Mazda	2
Oklahoma	Toyota	2
Oregon	Toyota	2
Pennsylvania	Toyota	3
South Carolina	Acura	1
South Carolina	BMW	1
South Carolina	Buick	1
South Carolina	Dodge	1
South Carolina	Isuzu	1
South Carolina	Jaguar	1

State	vehicle_maker	customer_count /Most prefered vehicle
South Carolina	Kia	1
South Carolina	Mazda	1
South Carolina	Mitsubishi	1
Tennessee	Mazda	3
Texas	Chevrolet	9
Utah	Buick	1
Utah	Chevrolet	1
Utah	Dodge	1
Utah	Isuzu	1
Utah	Lincoln	1
Utah	Maybach	1
Utah	Oldsmobile	1
Utah	Pontiac	1
Utah	Subaru	1
Utah	Volkswagen	1
Vermont	Mazda	1
Virginia	Ford	5
Washington	Chevrolet	5
West Virginia	Mercedes-Benz	2
Wisconsin	Acura	1
Wisconsin	Cadillac	1
Wisconsin	Chevrolet	1
Wisconsin	Dodge	1
Wisconsin	Honda	1
Wisconsin	Mazda	1
Wisconsin	Nissan	1
Wisconsin	Pontiac	1
Wyoming	Buick	1

Above table contains list of most preferred vehicle makers in each state

Observations/Findings

1. Chevrolet and Ford Dominate Multiple States:

Chevrolet and Ford emerge as popular choices in various states, with high customer counts. Chevrolet is the most preferred in California, Colorado, and Texas, while Ford is favored in Maryland, North Dakota, and Virginia.

2. Diverse Preferences in California:

In California, customers have diverse preferences, with Audi, Chevrolet, Dodge, Ford, and Nissan all having the same customer count of 6. This indicates a wide range of choices and competition in the California market.

3. Luxury Brands in High-Population States:

High-population states like New York and Texas show preferences for Toyota, Pontiac, and Chevrolet. These states have most populations, and the preferences may be influenced by factors such as fuel efficiency, reliability, and brand perception.

4. Strong Presence of Domestic Brands:

Domestic brands such as Chevrolet, Ford, and Dodge are prominent across multiple states. This may reflect the strong market presence of American automakers and the popularity of their vehicle models.

6. Luxury Vehicle Preferences in New Jersey:

New Jersey shows a preference for luxury brands, with Hyundai and Mercedes- Benz being the most preferred.

7. Variety of Preferences in Midwestern States:

Midwestern states like Illinois, Indiana, and Ohio show preferences for a mix of domestic and foreign brands. Chevrolet, Ford, GMC, and Mazda are among the preferred choices, indicating diverse customer preferences in these regions.

8. Consideration for Local Market Dynamics:

Preferences for specific vehicle makers may be influenced by local market dynamics, such as dealership availability, regional advertising, and brand perception within a community.

Understanding customer preferences on a state level allows for more targeted and effective marketing campaigns.

REVENUE METRICS

Q6) what is the trend of number of orders by quarters?
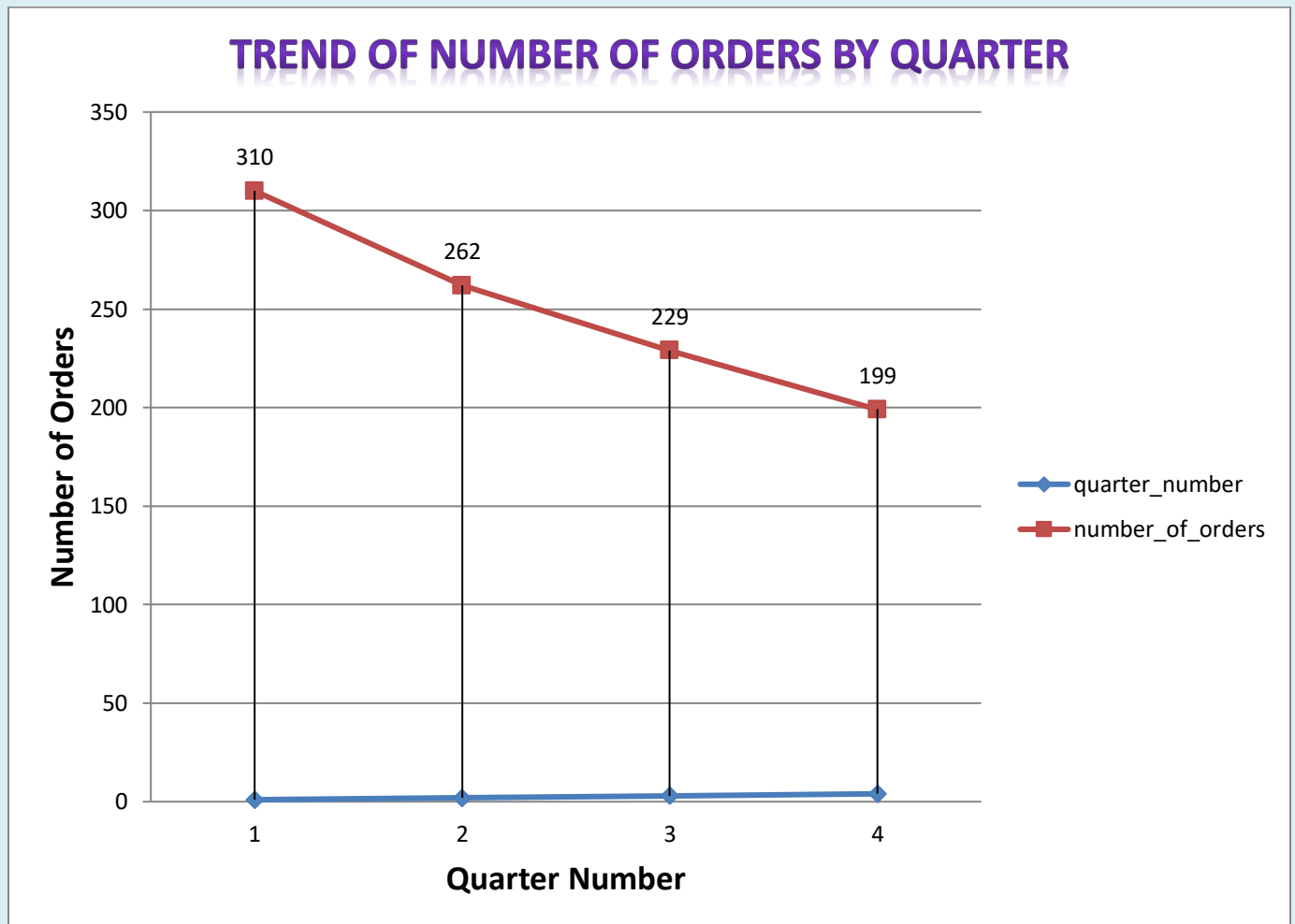

TREND OF NUMBER OF ORDERS BY QUARTER

Fig 5: Trend of number of orders by quarter

Observations/Findings

1. Decreasing Trend in Number of Orders:

There is a consistent decrease in the number of orders from Quarter 1 to Quarter 4, suggesting a downward trend in order volumes.

2. Significant Drop from Quarter 1 to Quarter 4:

The number of orders starts at 310 in Quarter 1 and decreases to 199 in Quarter 4. This indicates a substantial decline in order activity over the four quarters.

3. Quarter 1 Has the Highest Order Volume:

 Quarter 1 has the highest number of orders, with 310 orders placed. This could be influenced by various factors such as seasonality, promotions, or specific events that occurred during that quarter.

4. Steady Decline in Subsequent Quarters:

 Quarters 2, 3, and 4 show a steady decline in the number of orders, with 262, 229,and 199 orders, respectively. This pattern can call for more research into the elements causing the drop in sales or customer engagement.

Q7) what is the quarter over quarter % change in revenue?

Quarter_number	Current_quarter_revenue	Previous_quarter_revenue	qoq_percentage_change
1	26,519,199.19	0	0
2	21,595,874.35	26,519,199.19	-18.57
3	19,719,917.59	21,595,874.35	-8.69
4	15,280,009.98	19,719,917.59	-22.51

Above table showcases the quarter over quarter % change in revenue

Observations/Findings

1. Initial Quarter Revenue:

In Quarter 1, the total revenue is 26,519,199.19.

The QoQ percentage change is not applicable (0%) when transitioning from Quarter 1 to Quarter 2, as the revenue in Quarter 1 is zero.

2. QoQ Percentage Change Calculation:

• Quarter 2 shows a QoQ percentage change of -18.57%, indicating a decrease compared to the previous quarter. The revenue drops from 26,519,199.19 to 21,595,874.35.

• Quarter 3 exhibits a further decline with a QoQ percentage change of -8.69%, resulting in revenue of 19,719,917.59.

• Quarter 4 continues the downward trend, with a QoQ percentage change of -22.51%. The revenue decreases to 15,280,009.98.(largest decline in revenue)

3. Consistent Decline in Revenue:

 The consistent negative QoQ percentage changes indicate a decline in revenue over the analyzed quarters.

4. Magnitude of Revenue Decline:

 The magnitude of revenue decline appears to be substantial, especially between Quarter 1 and Quarter 4, where the revenue decreases by approximately 42.55%.

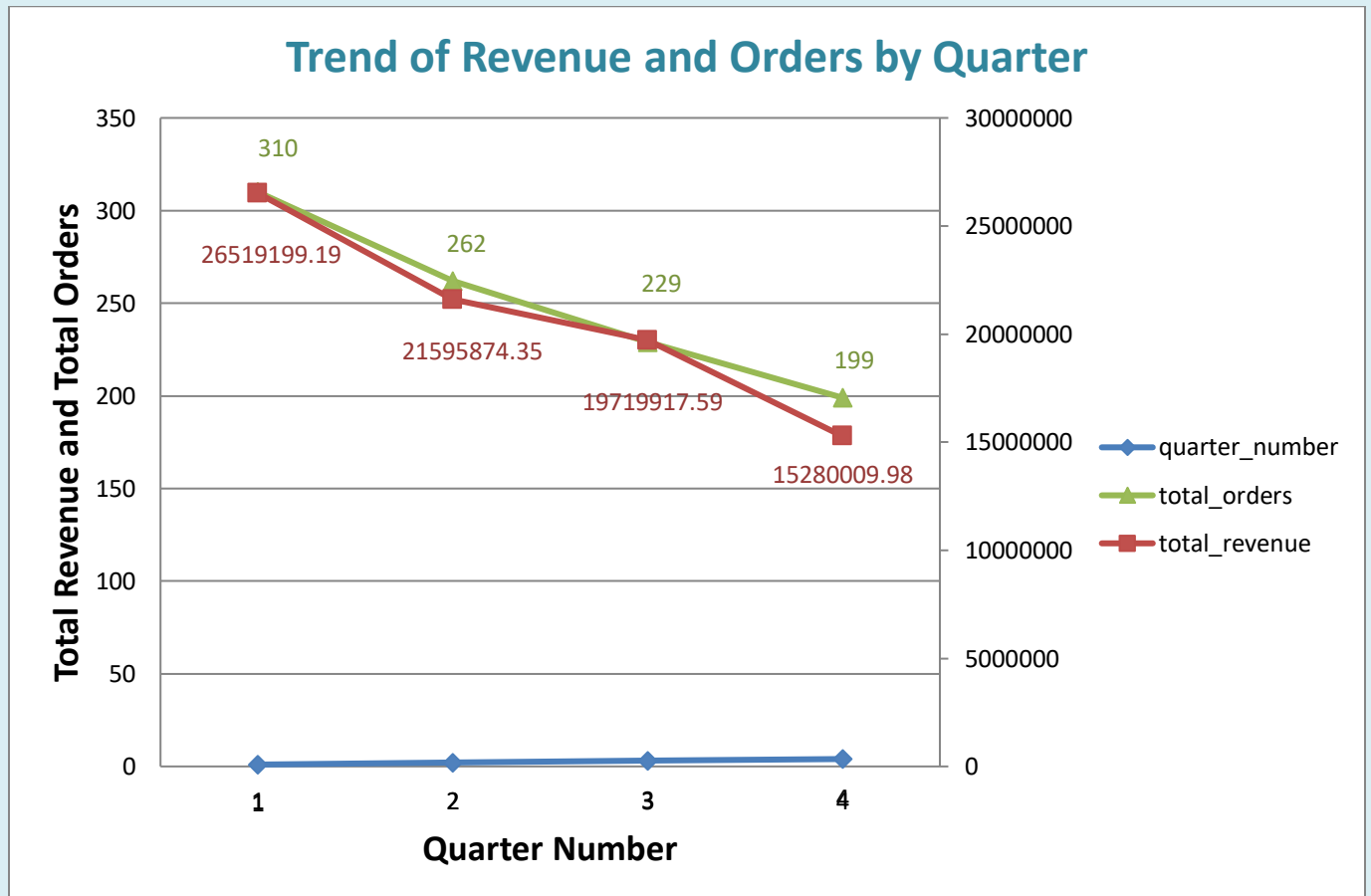**Q8) what is the trend of revenue and orders by quarters?**

Fig 6: Trend of Revenue and Orders by Quarter

Observations/Findings

1. Initial Quarter (Q1) Overview:

• In Quarter 1, there is total revenue of $26,519,199.19.

• The number of orders in Quarter 1 is 310.

2. Revenue and Orders Trend Over Subsequent Quarters:

• Both total revenue and the number of orders show a consistent decline over the quarters.

3. Decline in Revenue:

• Quarter 2 exhibits a decrease in total revenue to $21,595,874.35, representing a decline of approximately 18.57% compared to Quarter 1.

• Quarter 3 continues the downward trend with total revenue further reducing to $19,719,917.59, indicating an additional decline of approximately 8.69% from Quarter 2.

• Quarter 4 sees a further reduction in total revenue to $15,280,009.98, representing a significant decrease of approximately 22.51% from Quarter 3.

4. Decline in Number of Orders:

The number of orders also decreases consistently over the analyzed quarters ,reflecting a decline in customer engagement or purchase activity.

Quarter 2 sees a decrease in the number of orders to 262, representing a decline of approximately 15.48% compared to Quarter 1.

Quarter 3 continues the downward trend with the number of orders further reducing to 229, indicating an additional decline of approximately 12.60% from Quarter 2.

Quarter 4 shows a further reduction in the number of orders to 199, representing a significant decline of approximately 13.10% from Quarter 3.

5. Correlation Between Revenue and Orders:

The consistent decline in both revenue and the number of orders suggests a correlation between customer purchasing activity and the overall revenue generated.

SHIPPING METRICS

Q9) What is the average discount offered for different types of credit cards?

SL.No.	Credit_card_type	Average_discount
1	jcb	0.607382
2	visa-electron	0.623469
3	switch	0.610233
4	diners-club-carte-blanche	0.61449
5	laser	0.643846
6	china-unionpay	0.622174
7	diners-club-enroute	0.599792
8	americanexpress	0.616327
9	mastercard	0.6295
10	visa	0.600833
11	bankcard	0.609545
12	solo	0.585
13	maestro	0.624219
14	diners-club-us-ca	0.614615
15	instapayment	0.620625
16	diners-club-international	0.584

Above table shows average discount provided offered for different types of credit cards

Observations/Findings

1. Variability in Average Discounts:

The average discounts vary across different credit card types, ranging from approximately 58.4% to 64.4%.

2. Top Three Average Discounts:

The credit card types with the highest average discounts are "laser" (64.4%), "maestro" (62.4%), and "visa-electron" (62.3%).

3. Consistency in Average Discounts:

Many credit card types have average discounts clustered around the 60% range, suggesting a level of consistency in the discount offerings.

4. Diversity in Credit Card Types:

The data includes a diverse set of credit card types, including well-known ones like "visa," "mastercard," and "americanexpress," as well as less common types like "diners-club-enroute" and "china-unionpay."

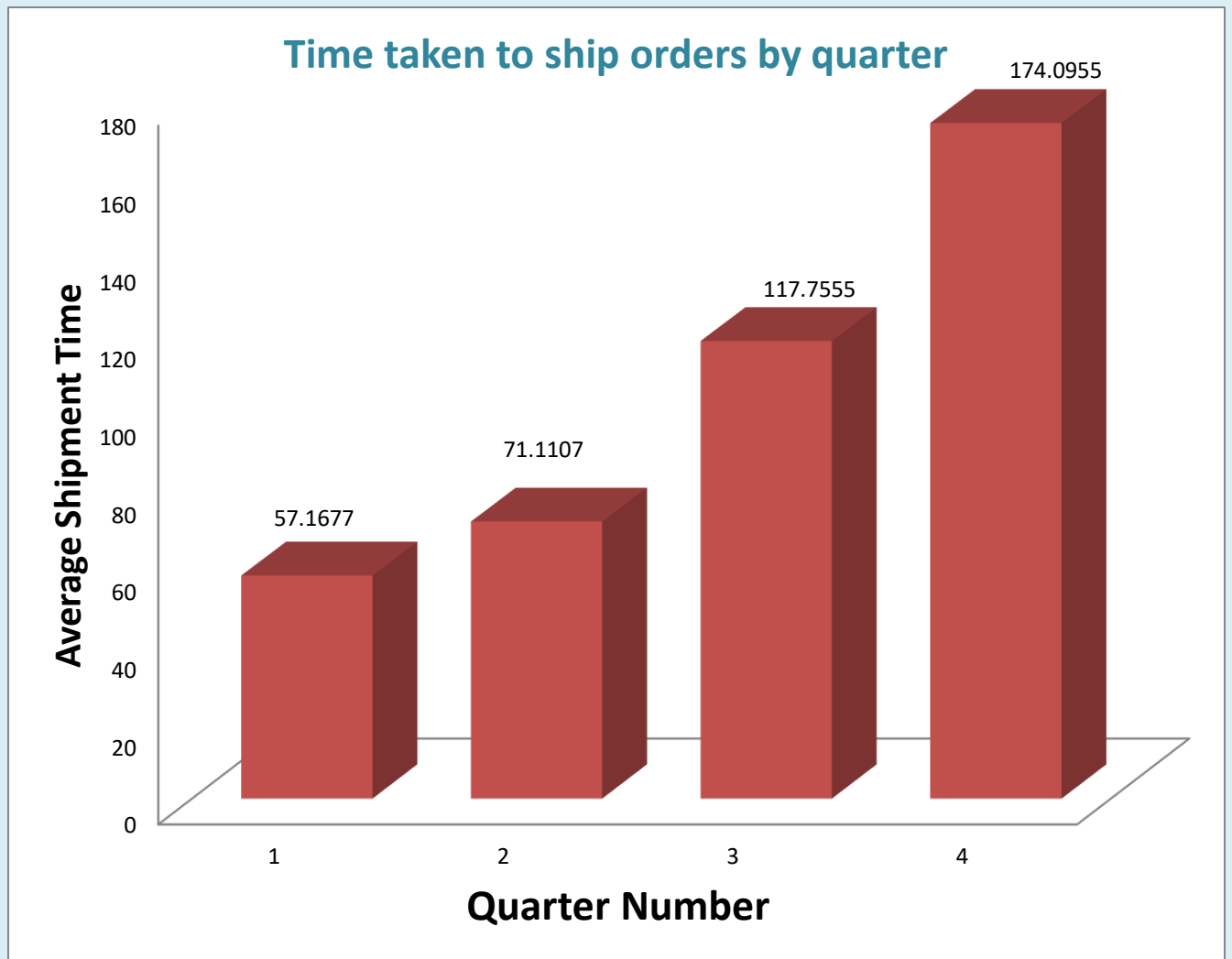**Q10) what is the average time taken to ship the placed orders for each quarters?**

Fig 7: **Average time taken to ship the placed orders for each quarters**

Observations/Findings

1. Increasing Shipment Time:

• The average shipment time shows an increasing trend from Quarter 1 to Quarter 4.

2. Initial Quarter (Q1) Overview:

• In Quarter 1, the average time taken to ship orders is approximately 57.17 days.

3. Quarterly Increase:

• The average shipment time increases in subsequent quarters:

• Quarter 2: Approximately 71.11 days

• Quarter 3: Approximately 117.76 days

• Quarter 4: Approximately 174.10 days

4. Potential Implications:

• The increasing trend in average shipment time may indicate challenges or Inefficiencies in the shipping process as the business scales or faces increased demand.

INSIGHTS AND RECOMMENDATION

Customer Distribution Across States:

1. Insight:

• **California and Texas have the highest customer counts, indicating a strong market presence in these states.**

2. Recommendation:

• **Focus marketing efforts on maintaining and expanding the customer base in California and Texas.**

• **Investigate factors contributing to high customer counts in these states and consider replicating successful strategies in other regions.**

Average Rating Trends:

1. Insight:

There is a declining trend in average ratings over the quarters, suggesting potential challenges in customer satisfaction.

2. Recommendation:

• **Conduct a detailed analysis of customer feedback to identify specific issues affecting satisfaction.**

• **Implement strategies to address concerns and enhance the overall customer experience.**

Customer Satisfaction Decline Over Time:

1. Insight:

• **The increase in "Very Bad" and "Bad" ratings indicates a decline in customer satisfaction, especially from Quarter 1 to Quarter 4.**

2. Recommendation:

• **Investigate the root causes of dissatisfaction by collecting detailed feedback from customers.**

• **Implement corrective actions and improvements in products or services to address customer concerns.**

Top 5 Vehicle Makers:

1. Insight:

• Chevrolet is the most preferred vehicle maker, followed by Ford and Toyota.

2. Recommendation:

• Leverage the popularity of Chevrolet and Ford in marketing campaigns.

• Consider partnerships or promotions with these manufacturers to capitalize on customer preferences.

Most Preferred Vehicle Make in Each State:

1. Insight:

• Chevrolet and Ford dominate in multiple states, reflecting the popularity of domestic brands.

2. Recommendation:

• Tailor marketing strategies to highlight the preferred vehicle makes in each state.

•Analyze regional preferences based on customer demand.

Trend of Number of Orders by Quarters:

1. Insight:

• There is a consistent decline in the number of orders over the analyzed quarters.

2. Recommendation:

•Investigate reasons behind the decline in order volumes, such as changes in market demand or competitive factors.

•Explore promotions or marketing campaigns to stimulate order activity.

Quarter Over Quarter % Change in Revenue:

1. Insight:

• There is a consistent decline in revenue over the quarters, with a significant drop from Quarter 1 to Quarter 4.

2. Recommendation:

•Conduct a thorough financial analysis to identify cost structures and revenue-generating activities.

• Make strategies to increase revenue such as offering discounts and price drops

Trend of revenue and orders by quarter

1. Insight:

• Both total revenue and the number of orders show a consistent decline over the quarters.

2. Recommendation:

• Implement cost-saving measures without compromising product or service quality.

• Explore opportunities for new revenue streams or partnerships.

Average Discount for Different Credit Cards:

1. Insight:

• Average discounts vary across different credit card types, indicating flexibility in discounting strategies.

2. Recommendation:

•Tailor discount strategies based on credit card types to maximize customer satisfaction and loyalty.

• Monitor the impact of discounts on overall profitability.

Average Time Taken to Ship Orders:

1. Insight:

• The average time taken to ship orders shows an increasing trend over the quarters.

2. Recommendation:

• Optimize logistics and shipping processes to reduce shipment times.

• Communicate transparently with customers about expected delivery times to manage expectations.