Lake City Auto

Annual Report on Sales & Consumer Metrics

analysis by Philip Johnson

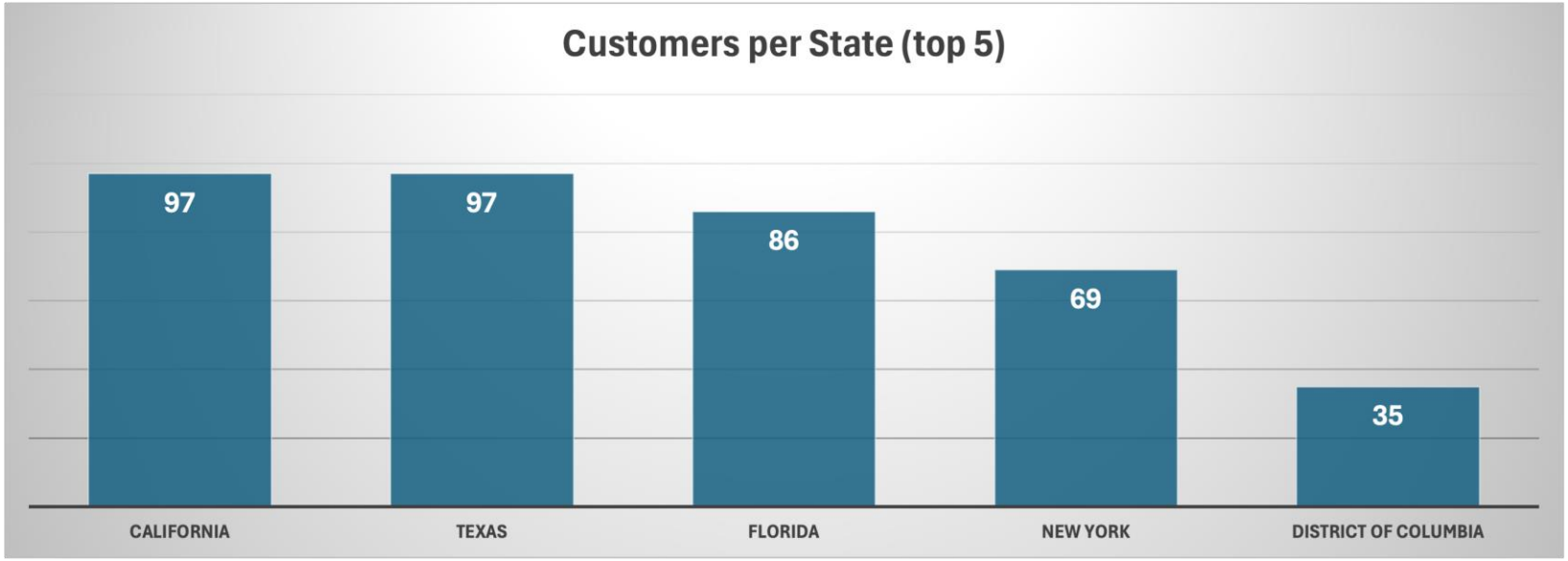
Yearly Business Overview

Total Revenue	Total Orders	Total Customers	AVG Rating
124.7 M	1000	994	3.1 (of 5)

Last QTR Revenue	Last QTR Orders	AVG Days to Ship	Good Feedback
23.3 M	199	105	21%

Customer Metrics

Distribution of Customers Across States

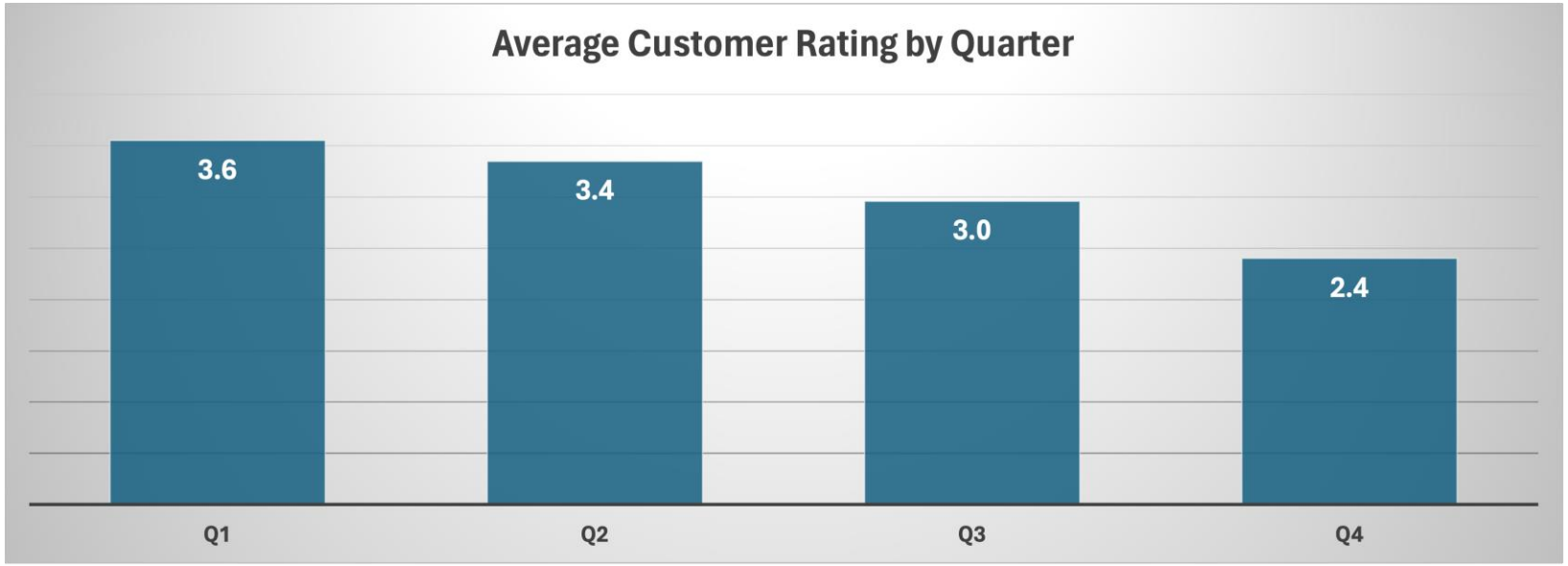


- 994 customers span a total of 49 states
- The top five states with the most customers comprise of 39% of the total customer base

[Q1] What is the distribution of customers across states?

```
SELECT
   state,
   COUNT(customer_id) AS customers_per_state
FROM customer_t
GROUP BY 1
ORDER BY 2 DESC
LIMIT 5;
```

Average Customer Ratings by Quarter

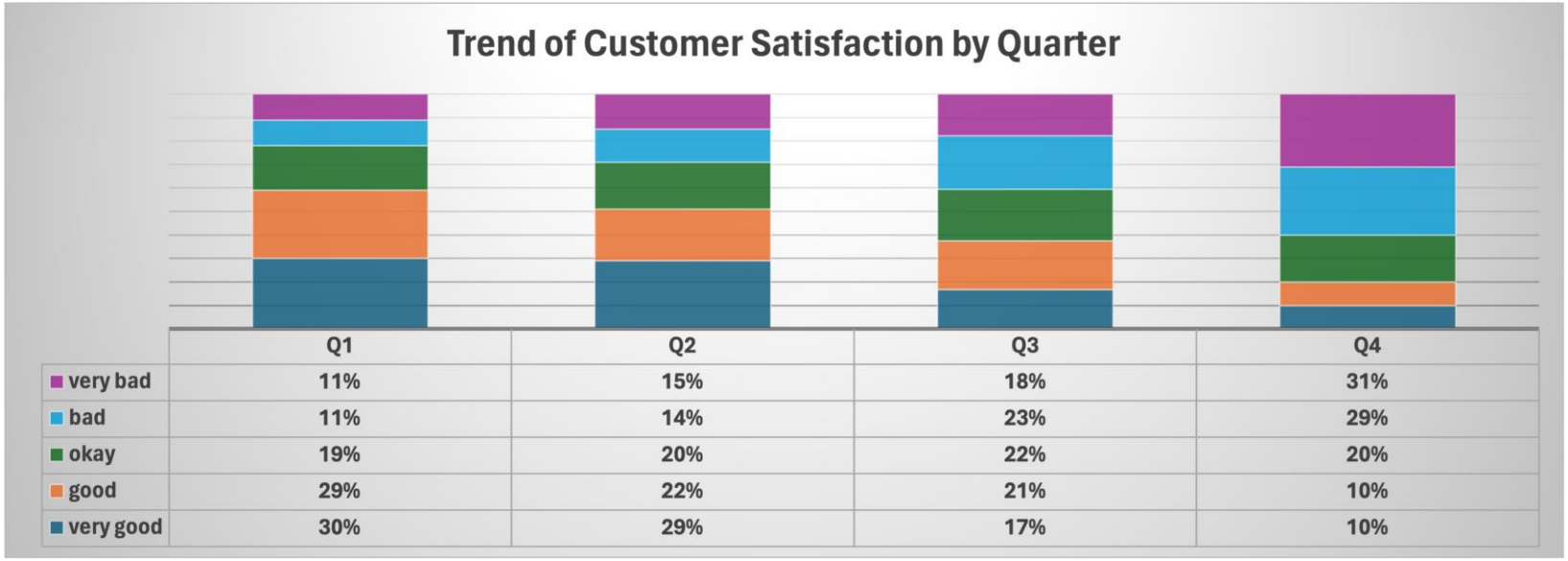


- Average customer ratings have decreased from 3.6 (of 5) in Q1 to 2.4 in Q4
- Customer ratings in declining trend for each quarter (Q1 to Q4)
- Customer rating for Q4 is in the ‘bad’ range

[Q2] What is the average rating in each quarter?

```
WITH feedback_select AS
(
  SELECT
    customer_feedback,
    quarter_number,
  CASE WHEN customer_feedback = 'Very Good' THEN 5
          WHEN customer_feedback = 'Good' THEN 4
          WHEN customer_feedback = 'Okay' THEN 3
          WHEN customer_feedback = 'Bad' THEN 2
          ELSE "1"
  END AS feedback
FROM  order_t
)
SELECT
  quarter_number,
  ROUND(AVG(feedback), 2) as avg_feedback
FROM feedback_select
GROUP BY 1
ORDER BY 1;
```

Trend of Customer Satisfaction



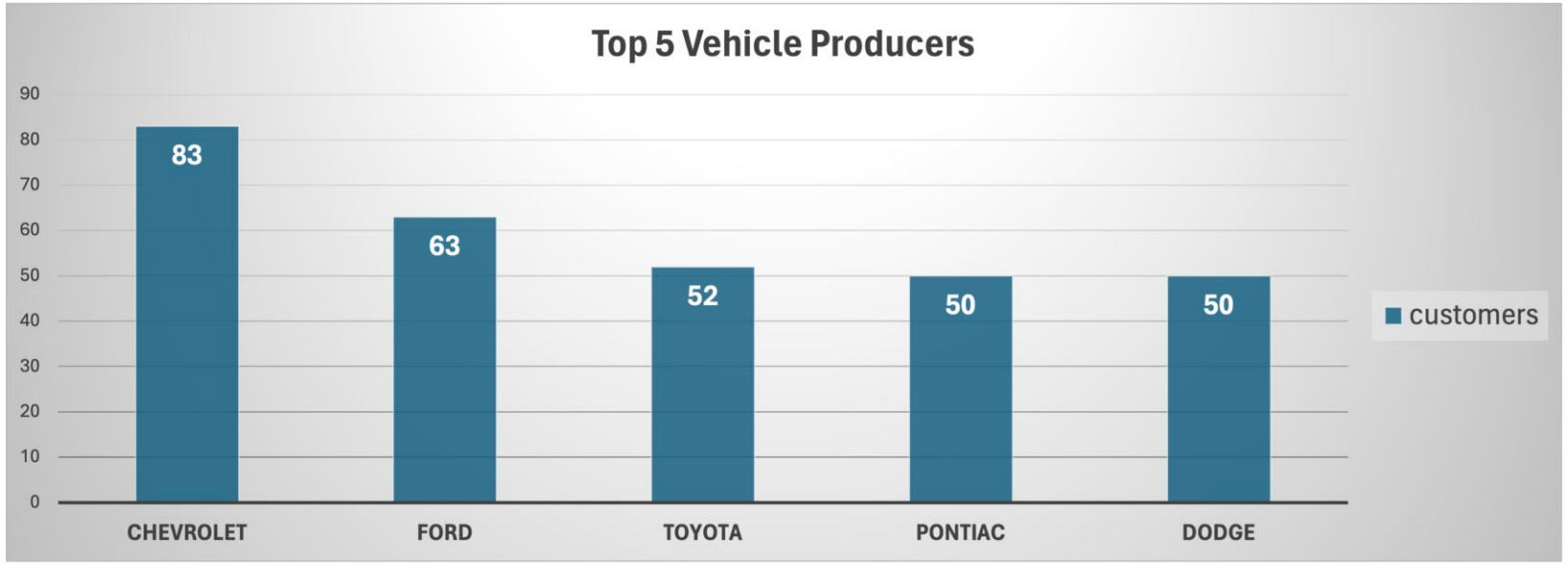
	Q1	Q2	Q3	Q4
very bad	11%	15%	18%	31%
bad	11%	14%	23%	29%
okay	19%	20%	22%	20%
good	29%	22%	21%	10%
very good	30%	29%	17%	10%

- Customer satisfaction is steadily declining from Q1 to Q4
- 59% of customers returned ‘very good’ or ‘good’ feedback in Q1
- 20% of customers returned ‘very good’ or ‘good’ feedback in Q4

[Q3] Are customers getting more dissatisfied over time?

```
WITH feedback_final AS
(
  SELECT
    quarter_number,
    SUM(CASE WHEN customer_feedback = 'VERY GOOD' THEN 1 ELSE 0 END) AS VERY_GOOD,
    SUM(CASE WHEN customer_feedback = 'GOOD' THEN 1 ELSE 0 END) AS GOOD,
    SUM(CASE WHEN customer_feedback = 'OKAY' THEN 1 ELSE 0 END) AS OKAY,
    SUM(CASE WHEN customer_feedback = 'BAD' THEN 1 ELSE 0 END) AS BAD,
    SUM(CASE WHEN customer_feedback = 'VERY BAD' THEN 1 ELSE 0 END) AS VERY_BAD,
    COUNT(customer_feedback) AS total_feedback
FROM order_t
GROUP BY 1
)
SELECT
  quarter_number,
  round(100*(VERY_GOOD/total_feedback)) AS PERC_VERY_GOOD,
  round(100*(GOOD/total_feedback)) AS PERC_GOOD,
  round(100*(OKAY/total_feedback)) AS PERC_OKAY,
  round(100*(BAD/total_feedback)) AS PERC_BAD,
  round(100*(VERY_BAD/total_feedback)) AS PERC_VERY_BAD
FROM feedback_final
ORDER BY quarter_number;
```

Top Vehicle Makers Preferred by Customers



- Sales of the top 5 vehicle producers comprise of 30% of the total customer base
- Out of 54 different vehicle producers sold, Chevrolet is the most preferred by customers

[Q4] Which are the top 5 vehicle makers preferred by the customer.

```
SELECT
   p.vehicle_maker,
   COUNT(o.customer_id) AS customers_per_maker

FROM order_t o
INNER JOIN  product_t p
 ON o. product_id = p.product_id

GROUP BY 1
ORDER BY 2 DESC
LIMIT 5;
```

Most Preferred Vehicle Make in Each State

(page 1)

STATE	VEHICLE MAKE	CUSTOMERS	STATE	VEHICLE MAKE	CUSTOMERS	STATE	VEHICLE MAKE	CUSTOMERS
Alabama	Dodge	5	Hawaii	Cadillac	1	Kansas	Ford	1
Alaska	Chevrolet	2	Hawaii	Ford	1	Kansas	GMC	1
Arizona	Pontiac	3	Hawaii	GMC	1	Kansas	Honda	1
Arizona	Cadillac	3	Hawaii	Nissan	1	Kansas	Lexus	1
Arkansas	Chevrolet	1	Hawaii	Pontiac	1	Kansas	Maserati	1
Arkansas	GMC	1	Hawaii	Toyota	1	Kansas	Mazda	1
Arkansas	Mitsubishi	1	Idaho	Dodge	2	Kansas	Mercedes-Benz	1
Arkansas	Pontiac	1	Illinois	Ford	3	Kansas	Nissan	1
Arkansas	Suzuki	1	Illinois	Chevrolet	3	Kansas	Saab	1
Arkansas	Volkswagen	1	Illinois	GMC	3	Kansas	Suzuki	1
California	Audi	6	Indiana	Mazda	4	Kansas	Volkswagen	1
California	Nissan	6	Iowa	Chevrolet	1	Kentucky	Acura	1
California	Chevrolet	6	Iowa	Chrysler	1	Kentucky	Audi	1
California	Dodge	6	Iowa	Dodge	1	Kentucky	Mercedes-Benz	1
California	Ford	6	Iowa	Ford	1	Kentucky	Mercury	1
Colorado	Chevrolet	5	Iowa	Hyundai	1	Kentucky	Nissan	1
Connecticut	Volvo	2	Iowa	Isuzu	1	Kentucky	Pontiac	1
Connecticut	Chevrolet	2	Iowa	Jeep	1	Kentucky	Ram	1
Connecticut	Mercury	2	Iowa	Mazda	1	Kentucky	Volvo	1
Connecticut	Maserati	2	Iowa	Pontiac	1	Louisiana	BMW	2
Delaware	Mitsubishi	2	Iowa	Porsche	1	Louisiana	Ford	2
District of Columbia	Chevrolet	4	Iowa	Subaru	1	Louisiana	Kia	2
Florida	Toyota	7	Kansas	Buick	1	Louisiana	Nissan	2
Georgia	Toyota	3	Kansas	Dodge	1	Louisiana	Pontiac	2

Most Preferred Vehicle Make in Each State

(page 2)

STATE	VEHICLE MAKE	CUSTOMERS	STATE	VEHICLE MAKE	CUSTOMERS	STATE	VEHICLE MAKE	CUSTOMERS
Maine	Mercedes-Benz	1	New Jersey	Mercedes-Benz	2	Utah	Buick	1
Maryland	Ford	5	New Mexico	Dodge	2	Utah	Chevrolet	1
Massachusetts	Dodge	2	New York	Toyota	5	Utah	Dodge	1
Massachusetts	Chevrolet	2	New York	Pontiac	5	Utah	Isuzu	1
Michigan	Ford	3	North Carolina	Volvo	3	Utah	Lincoln	1
Minnesota	GMC	3	North Dakota	Ford	1	Utah	Maybach	1
Mississippi	Dodge	1	North Dakota	Hyundai	1	Utah	Oldsmobile	1
Mississippi	Toyota	1	Ohio	Chevrolet	6	Utah	Pontiac	1
Missouri	Chevrolet	4	Oklahoma	Toyota	2	Utah	Subaru	1
Montana	Chevrolet	1	Oklahoma	Mazda	2	Utah	Volkswagen	1
Montana	Dodge	1	Oklahoma	Ferrari	2	Vermont	Mazda	1
Montana	Mitsubishi	1	Oregon	Toyota	2	Virginia	Ford	5
Nebraska	Cadillac	1	Pennsylvania	Toyota	3	Washington	Chevrolet	5
Nebraska	Chevrolet	1	South Carolina	Acura	1	West Virginia	Mercedes-Benz	2
Nebraska	Mercedes-Benz	1	South Carolina	BMW	1	Wisconsin	Acura	1
Nebraska	Nissan	1	South Carolina	Buick	1	Wisconsin	Cadillac	1
Nebraska	Pontiac	1	South Carolina	Dodge	1	Wisconsin	Chevrolet	1
Nebraska	Toyota	1	South Carolina	Isuzu	1	Wisconsin	Dodge	1
Nebraska	Volkswagen	1	South Carolina	Jaguar	1	Wisconsin	Honda	1
Nevada	Pontiac	3	South Carolina	Kia	1	Wisconsin	Mazda	1
New Hampshire	Chrysler	1	South Carolina	Mazda	1	Wisconsin	Nissan	1
New Hampshire	Lexus	1	South Carolina	Mitsubishi	1	Wisconsin	Pontiac	1
New Hampshire	Lincoln	1	Tennessee	Mazda	3	Wyoming	Buick	1
New Jersey	Hyundai	2	Texas	Chevrolet	9			

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

```
WITH final AS
(
SELECT
   *,
   RANK()OVER(PARTITION BY state ORDER BY customers_per_maker DESC) AS rnk
FROM
(
SELECT
   c. state,
   p.vehicle_maker,
   COUNT(o.customer_id) AS customers_per_maker

FROM order_t o
INNER JOIN  product_t p
 ON o. product_id = p.product_id
```

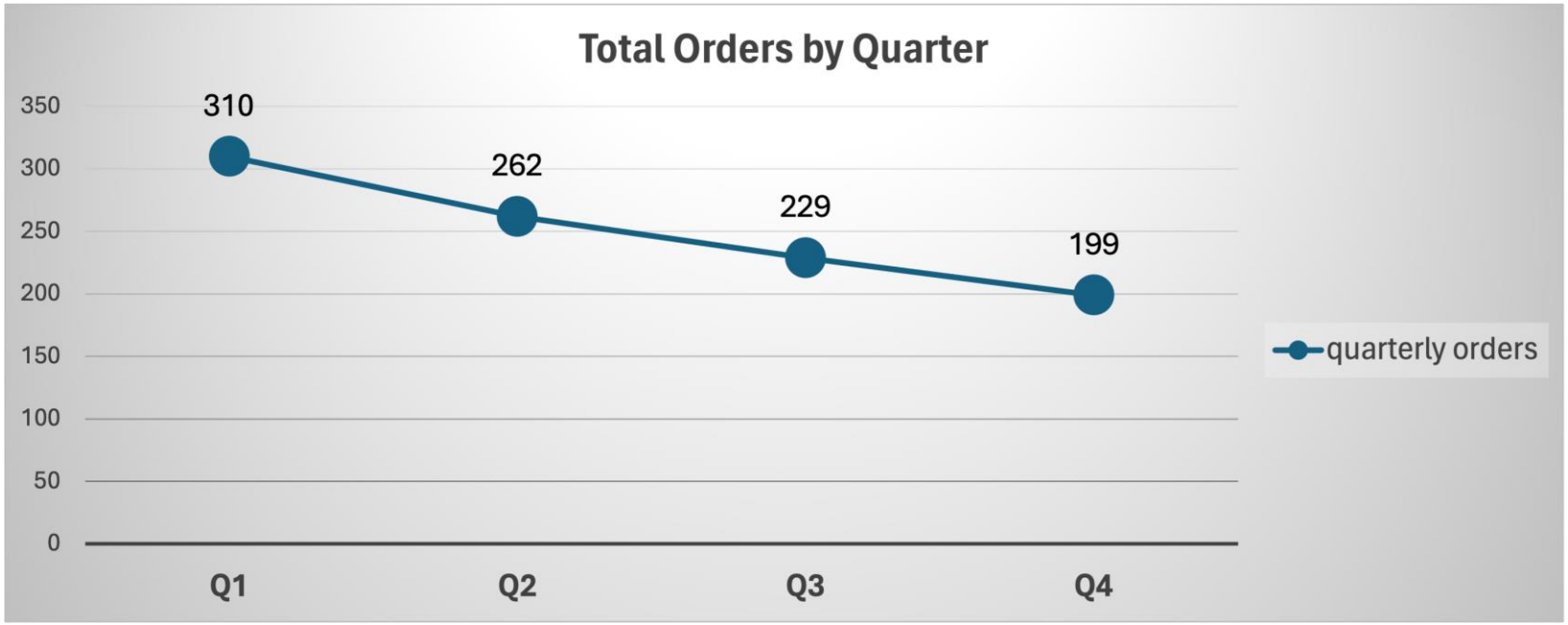
[Q5] What is the most preferred vehicle make in each state? (continued)

```
INNER JOIN customer_t c
 ON c.customer_id =o.customer_id
GROUP BY 1,2
ORDER BY c.state
) a
)

SELECT
   state,
   vehicle_maker,
   customers_per_maker
FROM final
WHERE rnk =1;
```

Revenue Metrics

Trend of Purchases by Quarter

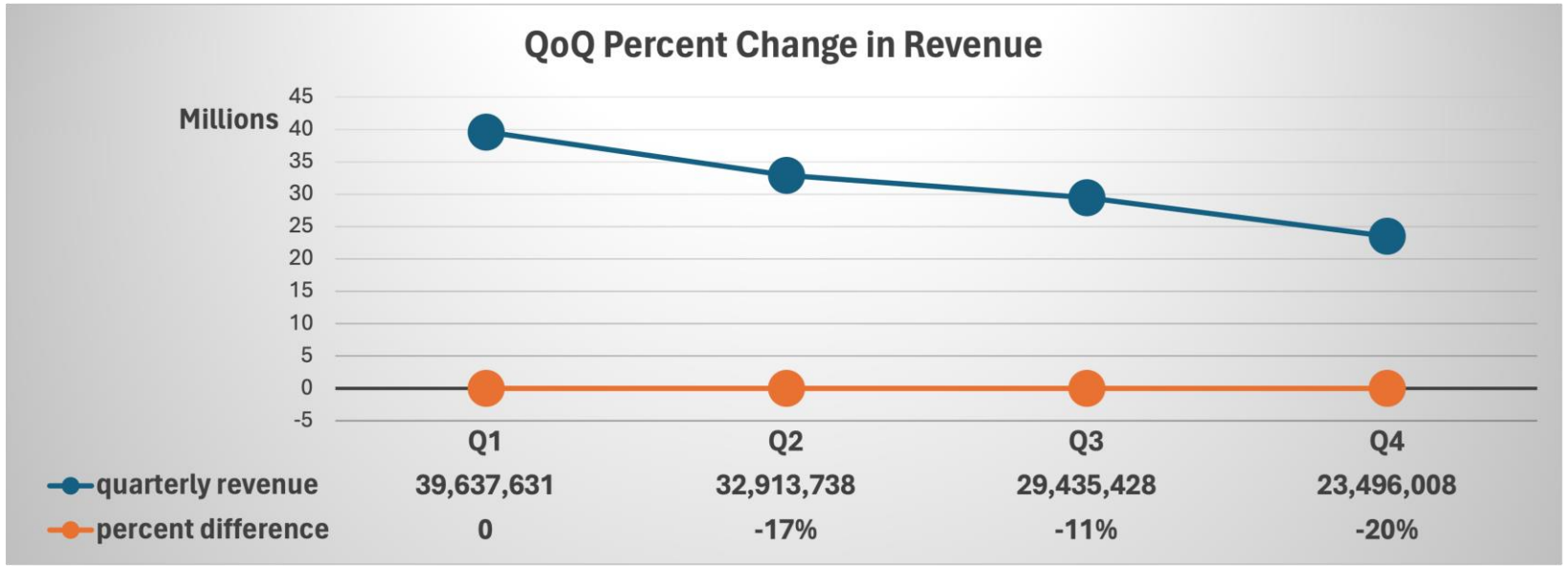


- Total orders from Q1 to Q4 in declining trend
- Total orders from Q1 to Q4 have declined by -111

[Q6] What is the trend of number of orders by quarters?

```
SELECT
   quarter_number,
   COUNT(order_id) AS quarterly_orders
FROM order_t
GROUP BY 1
ORDER BY 1;
```

Quarter on Quarter % Change in Revenue

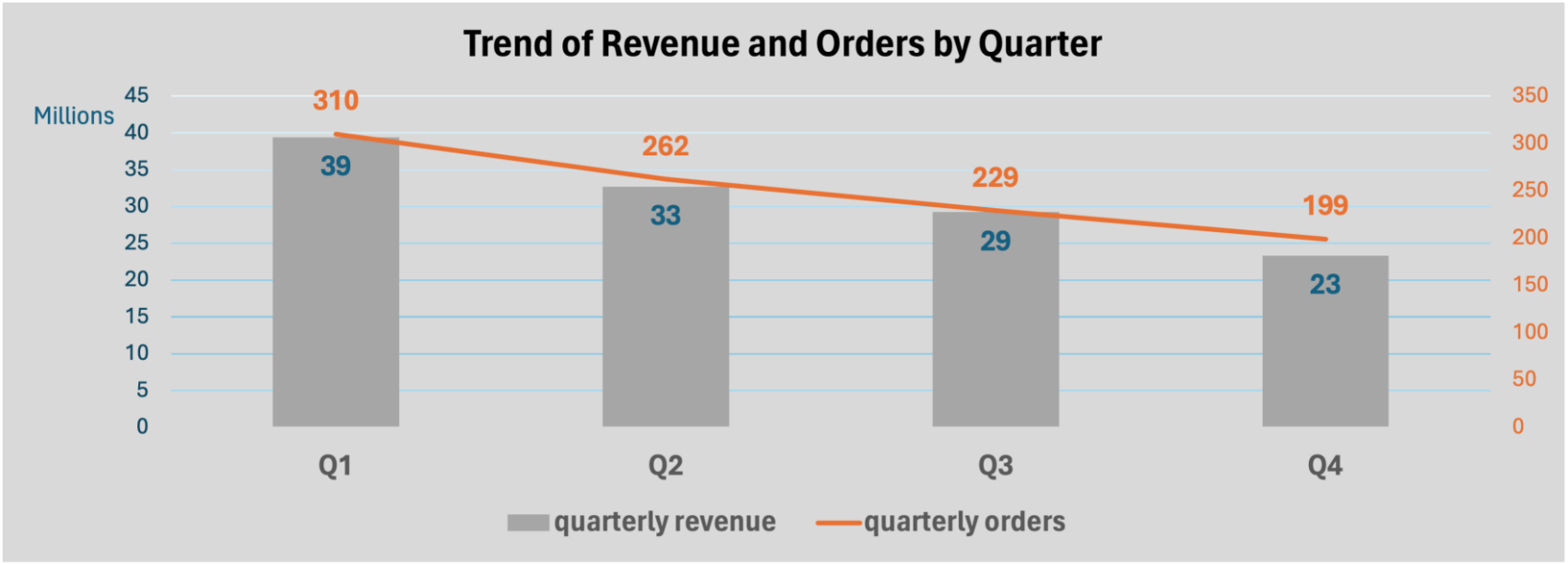


- Each quarter from Q1 to Q4 indicates a decline in revenue
- Revenue declined by 59% in Q4 compared to Q1

[Q7] What is the quarter over quarter % change in revenue?

```
WITH QoQ AS
(
  SELECT
    quarter_number,
    ROUND(SUM(quantity * (vehicle_price - ((discount/100)*vehicle_price))), 0) AS quarterly_revenue
  FROM order_t
  GROUP BY quarter_number
)
  SELECT
    quarter_number,
            quarterly_revenue,
            ROUND(LAG(quarterly_revenue) OVER(ORDER BY quarter_number), 2) AS prev_quar_revenue,
            ROUND((quarterly_revenue - LAG(quarterly_revenue) OVER(ORDER BY quarter_number))/LAG(quarterly_revenue)
OVER(ORDER BY quarter_number), 2) AS perc_diff
FROM QoQ;
```

Trend of Revenue and Orders by Quarter



- Revenue and orders in steady declining trend over each quarter (Q1 through Q4)
- Revenue declined by 59% in Q4 compared to Q1
- Orders declined by 64% in Q4 compared to Q1

[Q8] What is the trend of revenue and orders by quarters?

```
SELECT
    quarter_number,
    ROUND(SUM(quantity * (vehicle_price -
((discount/100)*vehicle_price))), 0) AS quarterly_revenue,
    COUNT(order_id) AS quarterly_orders
FROM order_t
GROUP BY 1
ORDER BY 1;
```

Shipping Metrics

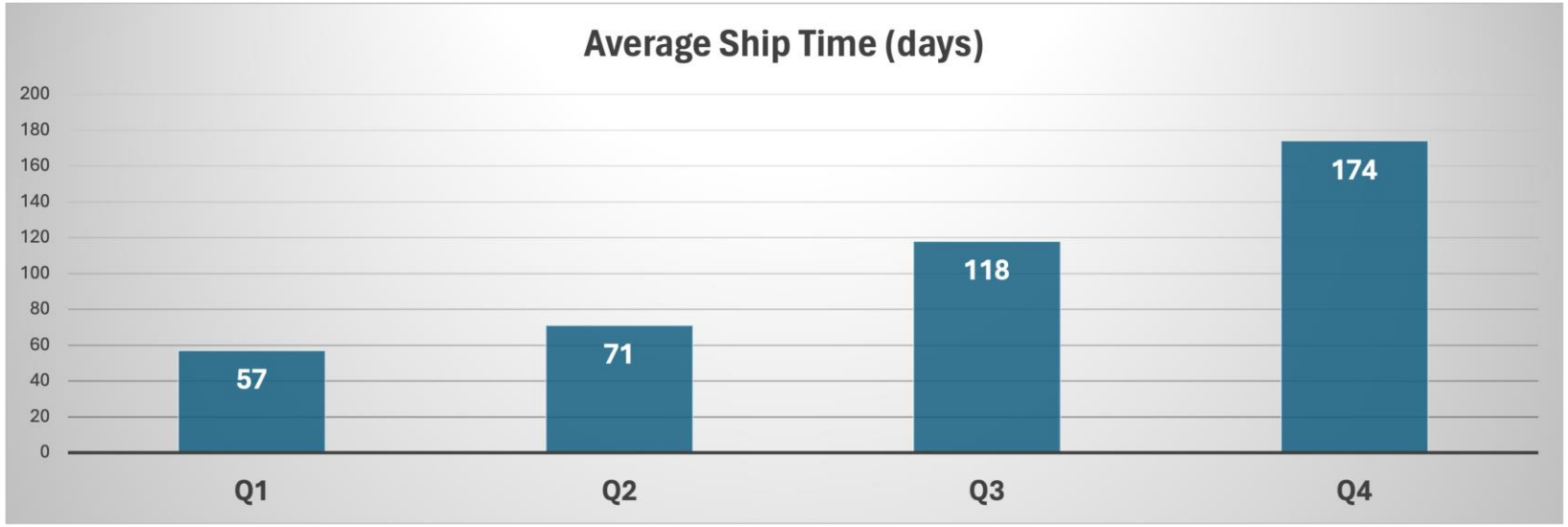
Average Discount Offered by Credit Card Type

- Of 16 credit card types used, discounts range from 0.58% to 0.64%
- Diners Club International card offers the lowest discount: 0.58%
- Laser card offers the greatest discount: 0.64%

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

```
SELECT
   c.credit_card_type,
   ROUND(AVG(discount), 2) as average_discount
FROM customer_t c
INNER JOIN  order_t o
 ON c.customer_id = o.customer_id
GROUP BY 1
ORDER BY 2 DESC;
```

Time Taken To Ship Orders by Quarter



- Delays in shipping time increase each quarter from Q1 to Q4
- Average shipping increased by 33% to 117 days when comparing Q1 to Q4

[Q10] What is the average time taken to ship the placed orders for each quarters?

```
Select
   quarter_number,
   ROUND(AVG(datediff(ship_date,order_date ))) as avg_ship_time
FROM order_t
GROUP BY 1
ORDER BY 1;
```