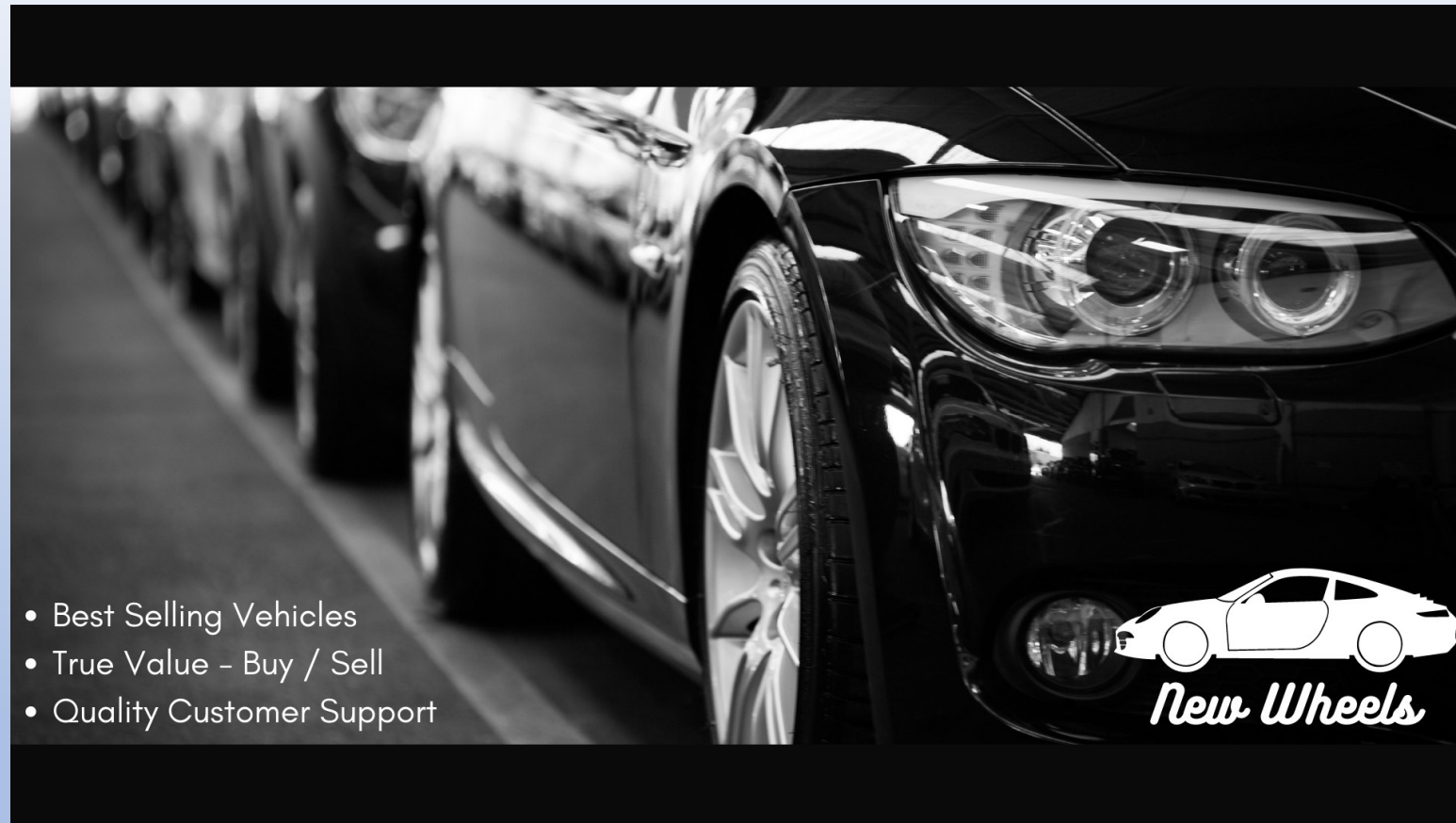


SQL and Databases



Project Report by Valter Ilha (BATCH: SQL-DB JAN'23)

Business Overview

- A lot of people in the world share a common desire: to own a vehicle.
- A car or an automobile is seen as an object that gives the freedom of mobility.
- Many are now preferring pre-owned vehicles because they come at an affordable cost, but at the same time, they are also concerned about whether the after-sales service provided by the resale vendors is as good as the care you may get from the actual manufacturers.
- New-Wheels, a vehicle resale company, has launched an app with an end-to-end service from listing the vehicle on the platform to shipping it to the customer's location.
- This app also captures the overall after-sales feedback given by the customer.

Problem Statement

- New-Wheels sales have been dipping steadily in the past year, and due to the critical customer feedback and ratings online, there has been a drop in new customers every quarter, which is concerning to the business.
- The CEO of the company now wants a quarterly report with all the key metrics sent to him so he can assess the health of the business and make the necessary decisions.

Overview

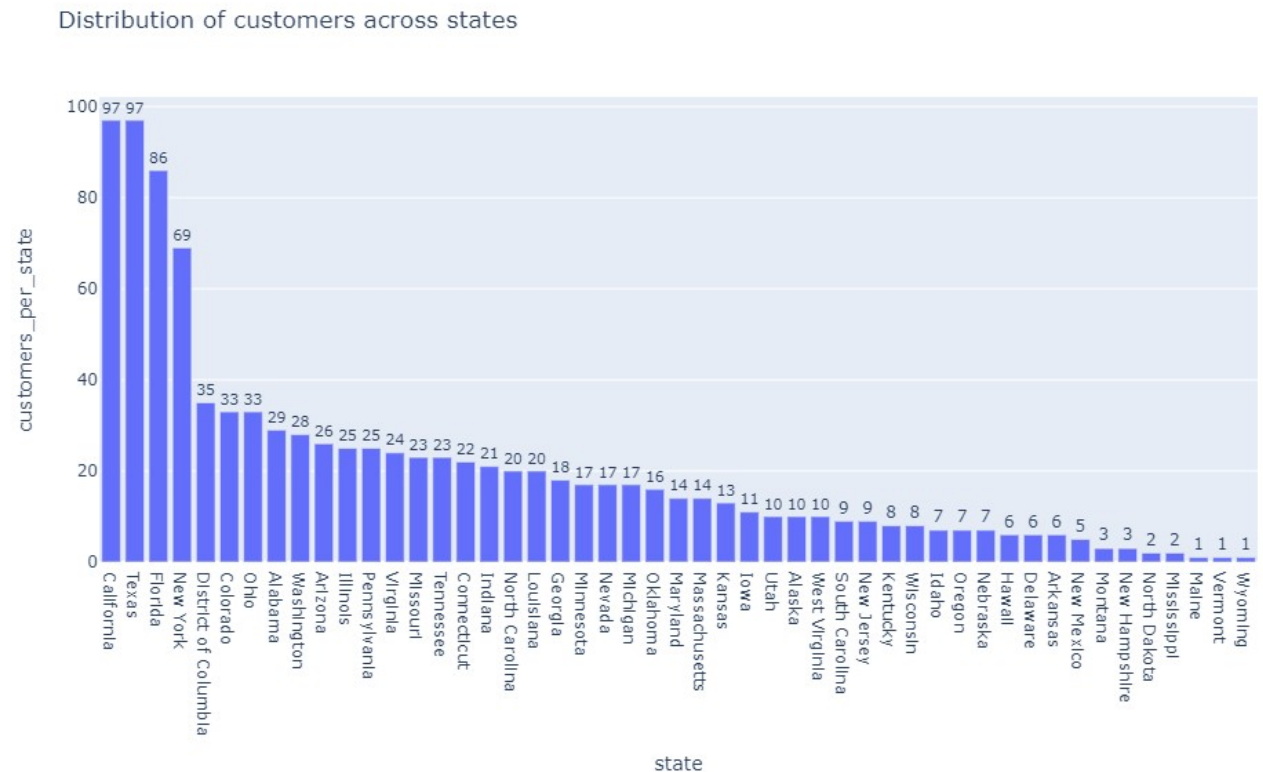
Total Revenue	Total Orders	Total Customers	Average Rating
76,9 M (\$)	1000	994	3,1 (scale 1 to 5)
Last Quarter Revenue	Last Quarter Orders	Average Days to Ship	% of Good Feedback
14,9 M (\$)	199	98	21,5 %

Metrics

1. Distribution of customers across states

Note: The result shown below is first 5

State	Customers per state
California	97
Texas	97
Florida	86
New York	69
District of Columbia	35

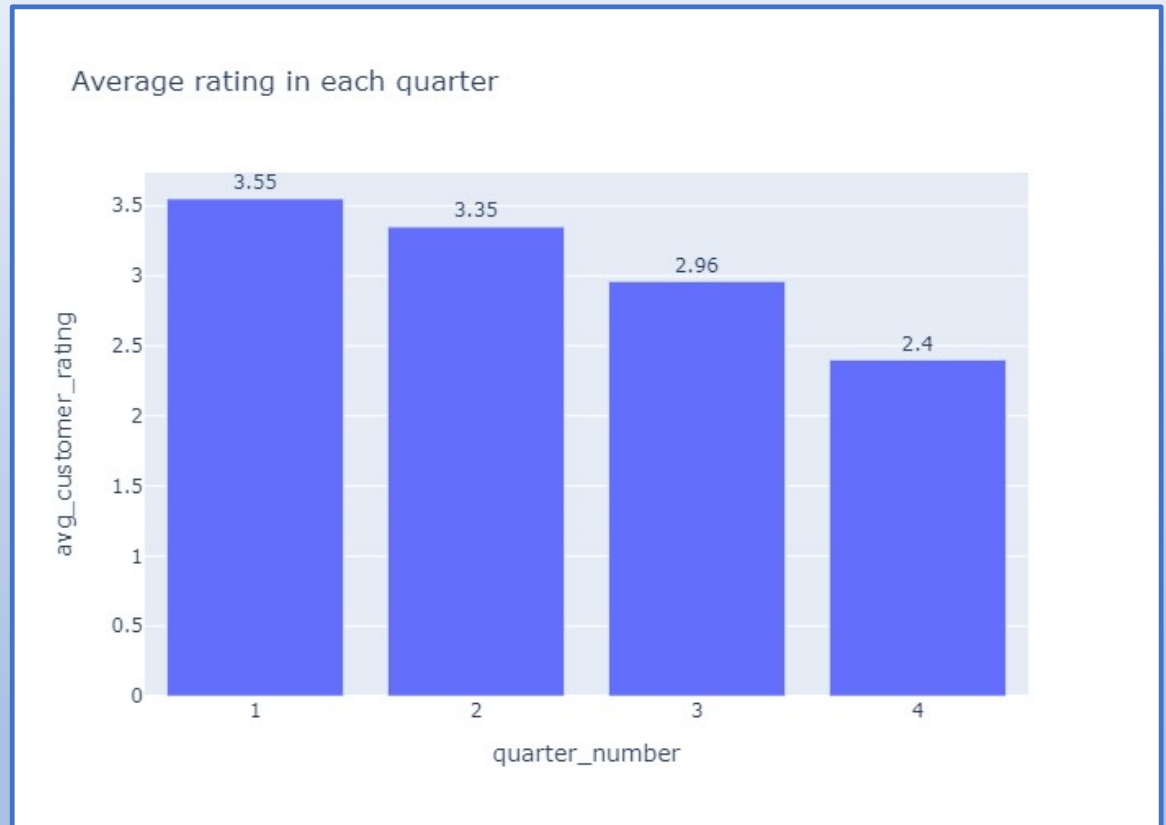


Observations / Findings

- The top 5 states account for 38,4% of the total customers (California and Texas at the top).
- There are 21 states with 10 or less customers.

2. Average rating in each quarter

Quarter number	Avg customer rating
1	3,55
2	3,35
3	2,96
4	2,40

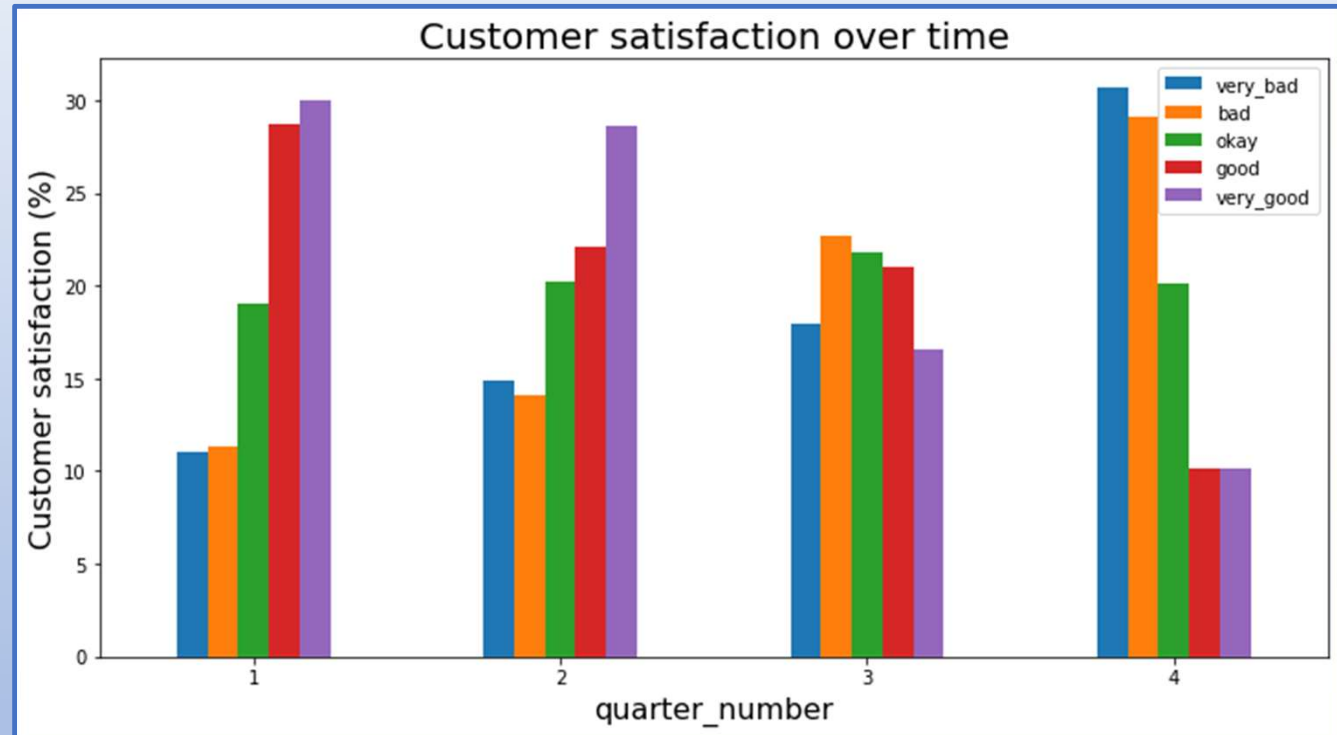


Observations / Findings

- The average customer rating of our service has decreased consistently along the last year.
- The rating decreased from “Good” in the 1st quarter, to “Bad” in the 4th quarter.

3. Are customers getting more dissatisfied over time?

Quarter number	Very bad rate %	Bad rate %	Okay rate %	Good rate %	Very good rate %
1	11	11	19	29	30
2	15	14	20	22	29
3	18	23	22	21	17
4	31	29	20	10	10



Observations / Findings

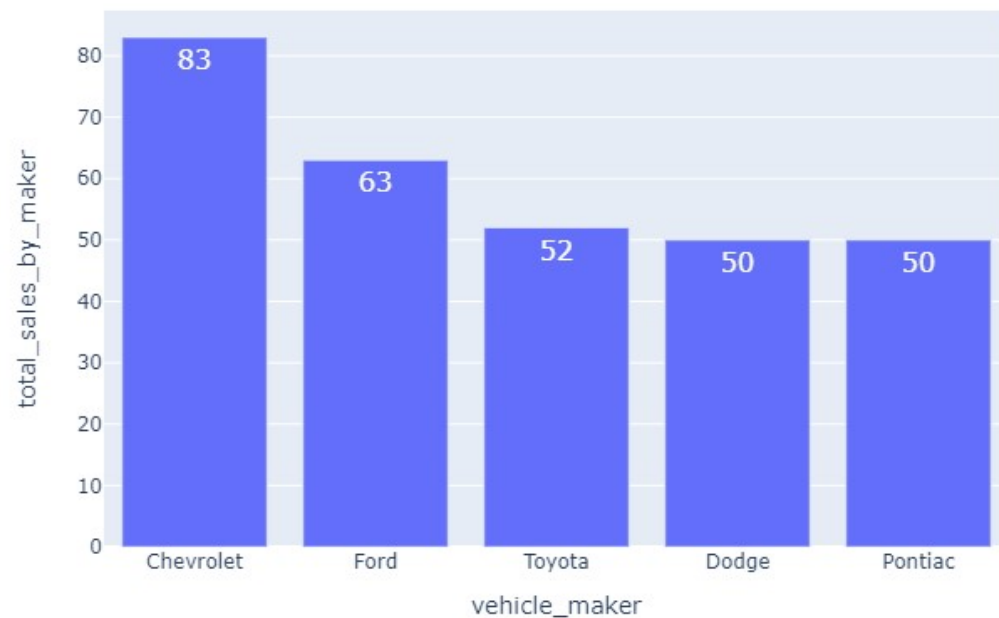
- The satisfaction of our customers has deteriorated over the last year.
- The negative ratings have consistently increased from 11% to 30%, and the most positive ratings have decreased from 30% to 10%.

4. Top 5 vehicle makers preferred by customers

Note: The result shown below is first 5

Vehicle maker	Total sales by maker
Chevrolet	83
Ford	63
Toyota	52
Dodge	50
Pontiac	50

Top 5 vehicle makers preferred by customers

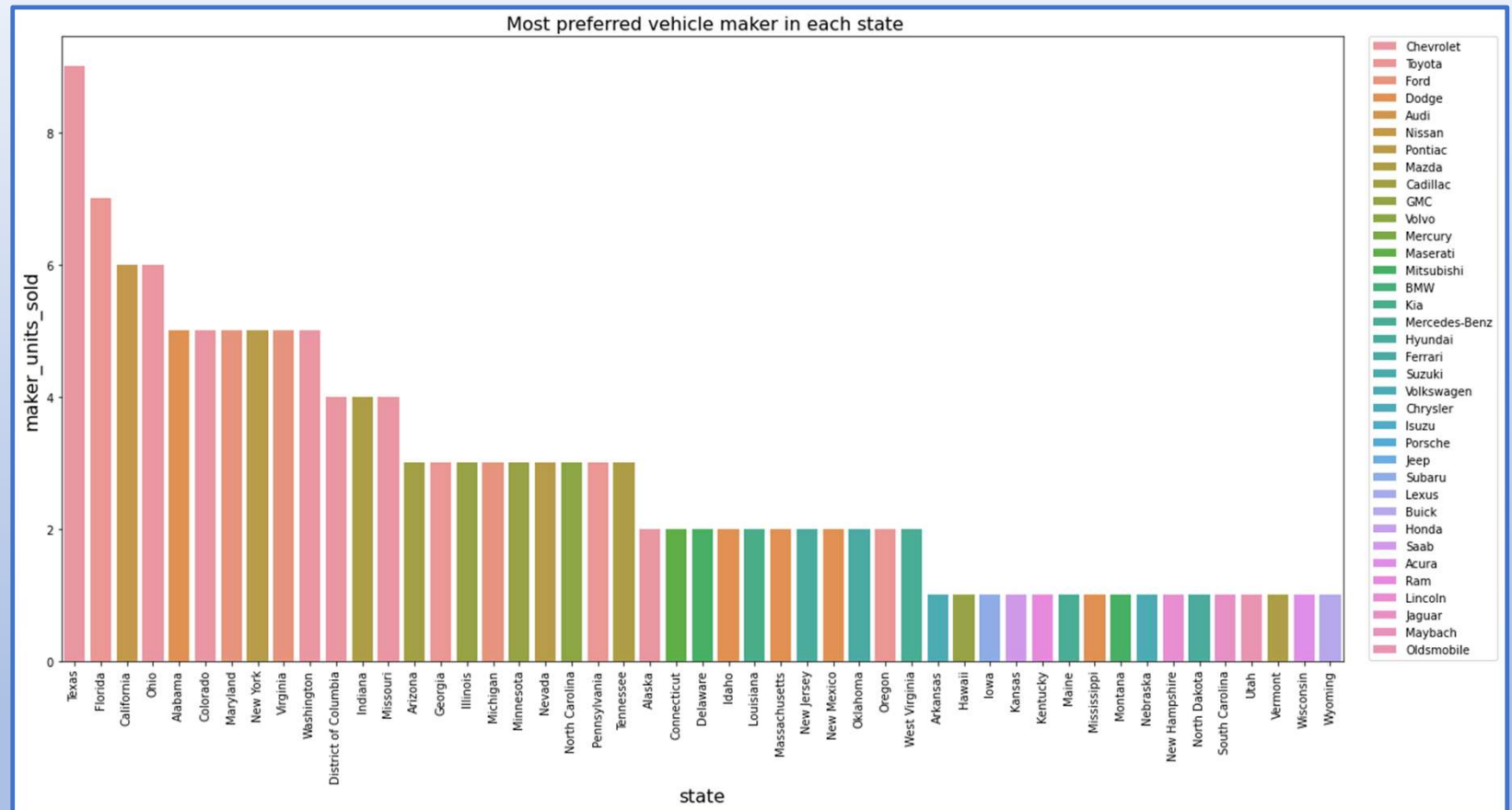


Observations / Findings

- Chevrolet is by far the most preferred vehicle maker by our customers.
- Ford, Toyota, Dodge and Pontiac complete the top 5. Clients prefer American vehicle brands.

5. Most preferred vehicle maker in each state

State	Vehicle maker	Maker units sold
Texas	Chevrolet	9
Florida	Toyota	7
California	Ford	6
Ohio	Chevrolet	6
Alabama	Dodge	5

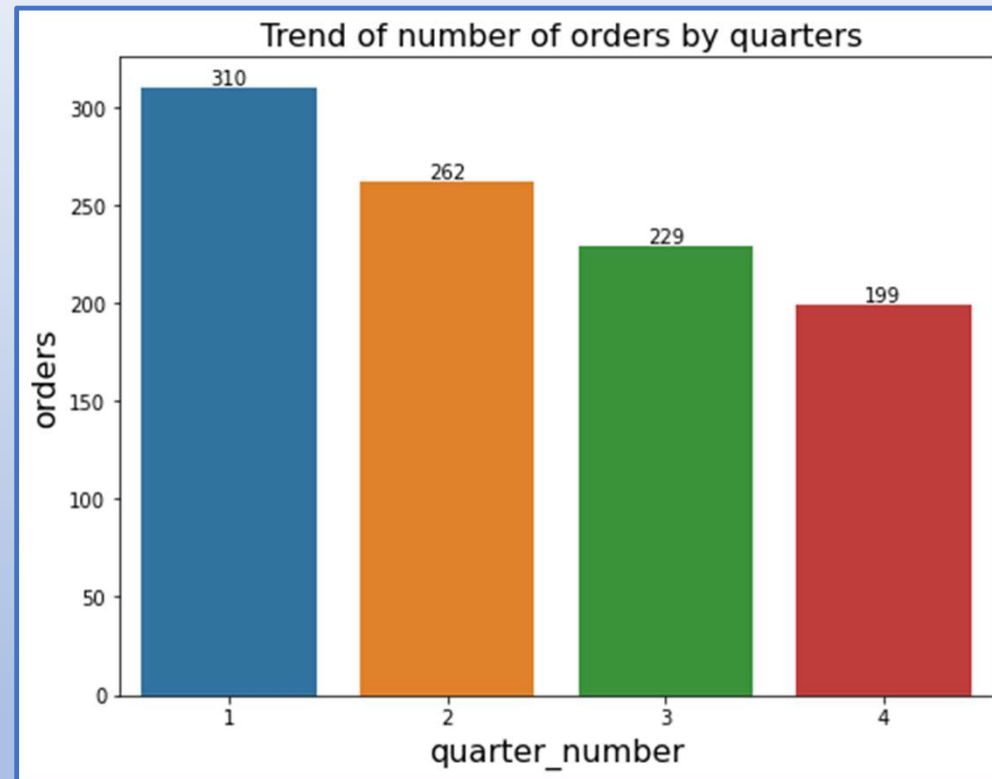


Observations / Findings

- In Texas, Chevrolet is top seller, in Florida Toyota is the preferred brand.
- In more than 50% of the states, brand preference is distributed among various makers (top units sold/brand ≤ 2).

6. Trend of number of orders by quarters

Quarter number	Orders
1	310
2	262
3	229
4	199

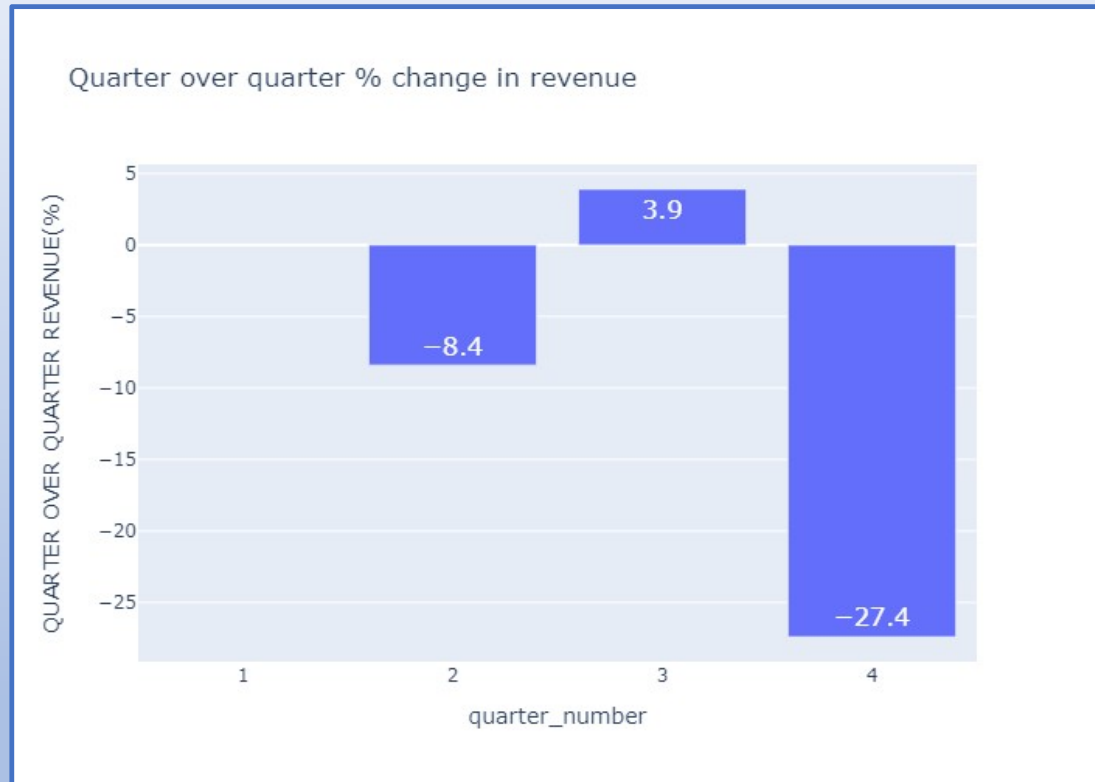


Observations / Findings

- New Wheels has sold 1000 units over the last 4 quarters, but has systematically lost new customers.
- From the 1st to the 4th quarter, sales have decreased 36% (less 111 orders).

7. Quarter over quarter % change in revenue

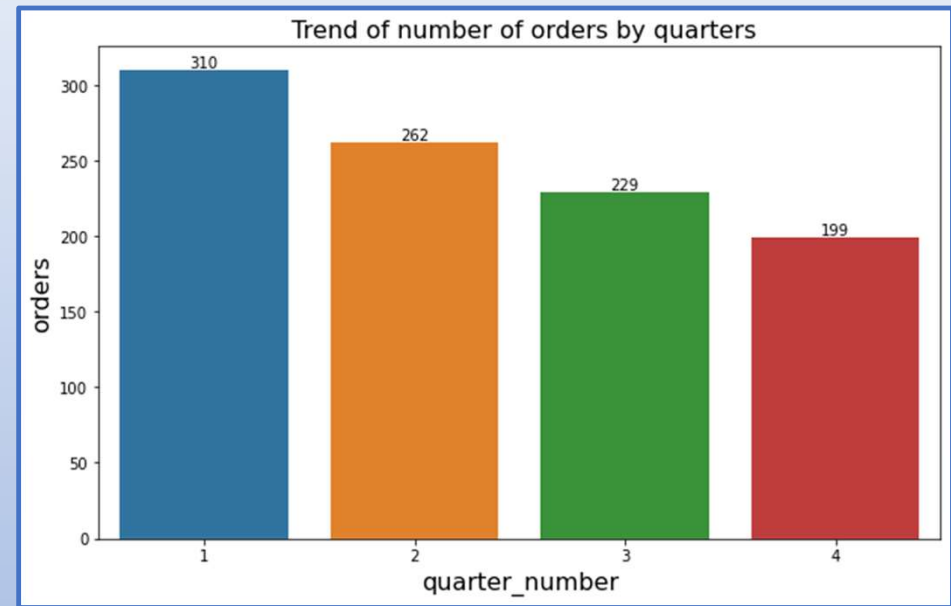
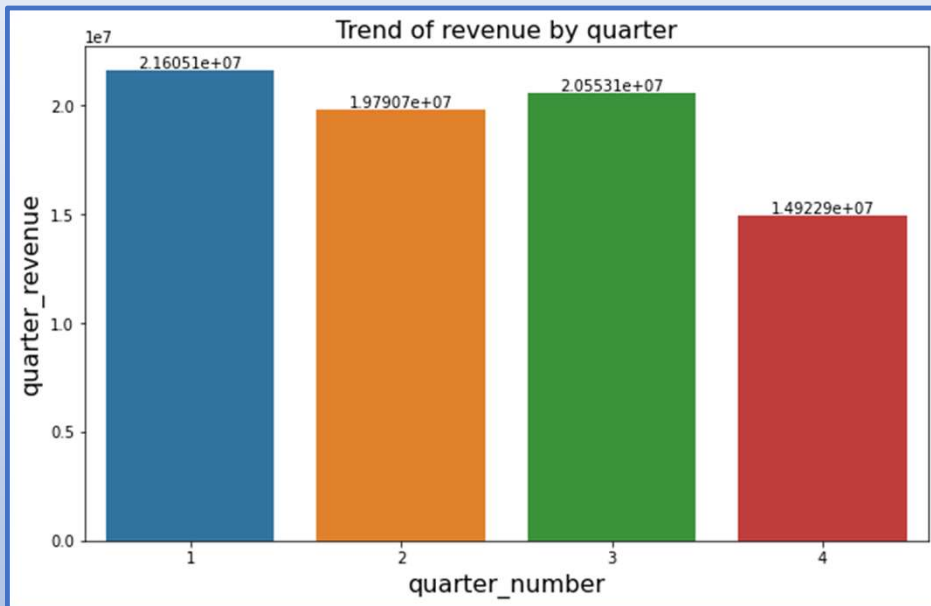
Quarter number	Revenue (\$)	QoQ REVENUE (%)
1	21,6 M	0
2	19,8 M	-8,4
3	20,6 M	3,9
4	14,9 M	-27,4



Observations / Findings

- We accumulated losses in the 2nd and mostly in the 4th quarter. The 3rd quarter was positive by a small percentage.
- In the three firsts quarters we had revenues around 20 to 22 M \$, but we lost 5 M \$ in revenues in the last quarter.

8. Trend of revenue and orders by quarters



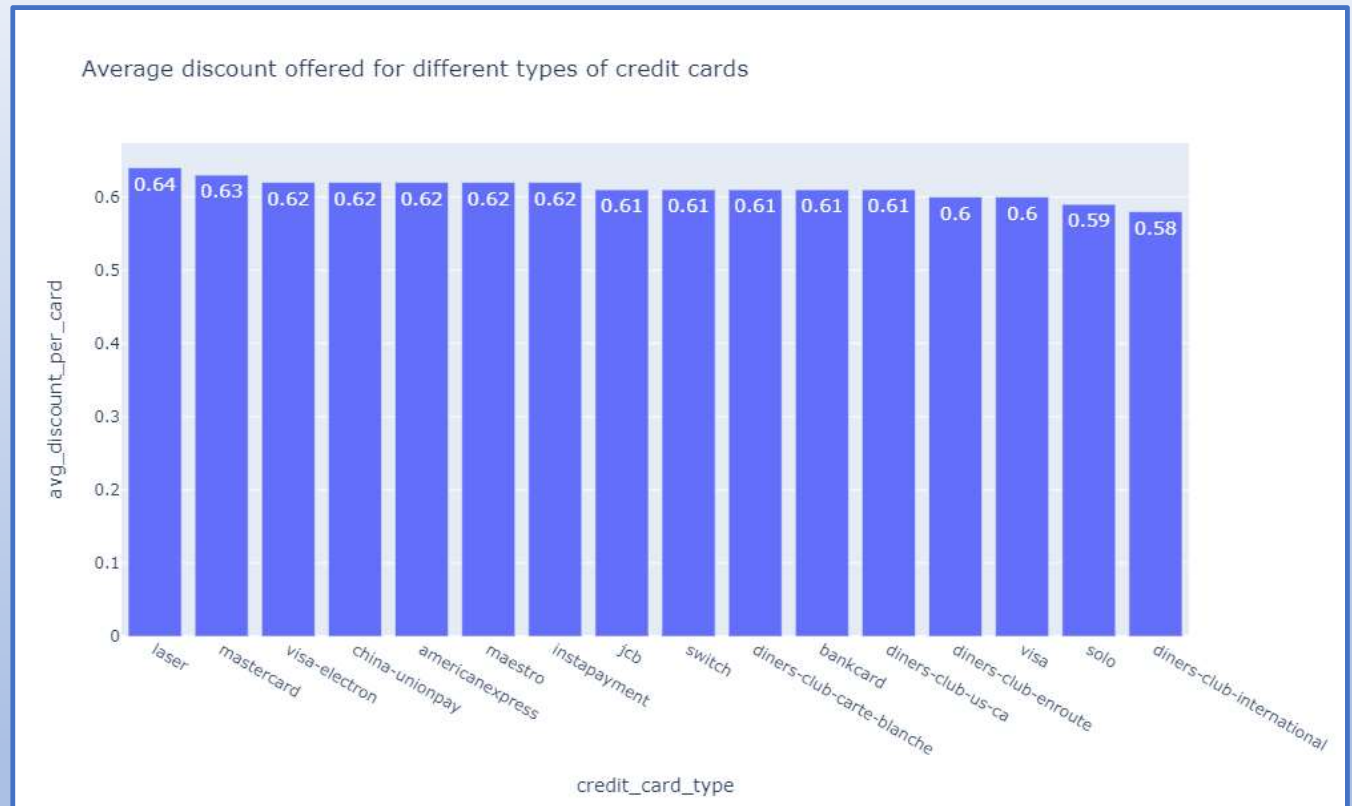
Observations / Findings

- In the first 3 quarters, New Wheels had a fairly constant revenue, despite the reduction in units sold (sold more expensive cars).
- In the last quarter the reduction in units sold was accompanied by a 27% loss in revenues.

9. Average discount offered for different types of credit cards

Note: The result shown below is first 3 and last 2

Credit card type	Avg discount per card
laser	0,64
mastercard	0,63
visa-electron	0,62
...	...
solo	0,59
diners-club-international	0,58

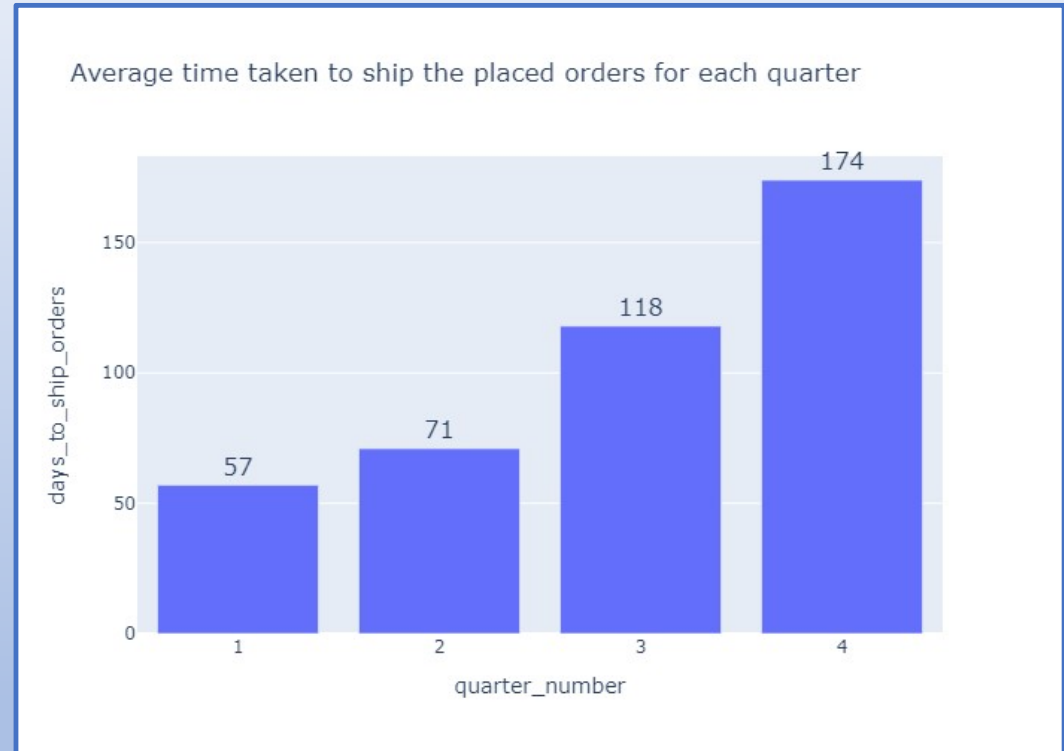


Observations / Findings

- The different credit cards offer a discount ranging from 0,58% to 0,64%.
- Laser credit card offers the maximum discount, and Diners_Club_International has the lowest discount.

10. Average time taken to ship the placed orders for each quarter

Quarter number	Days to ship orders
1	57
2	71
3	118
4	174



Observations / Findings

- The number of days from client order to vehicle shipping has increased almost exponentially over the last year.
- The days needed to deliver the vehicles has triplicated from 1st to 4th quarter.

New Wheels - Insights and Recommendations

Insights:

- Client dissatisfaction has consistently increased over the past year.
- The New Wheels rating by the clients decreased from 3,6 to 2,4 (in a scale of 1 to 5).
- Chevrolet, Ford and Toyota are the three preferred vehicle makers.
- New Wheels lost orders and revenue along last year
- Number of days to deliver the vehicles has increased sistematically.

Recommendations:

- ✓ Reduce the number of days from order by the client to vehicle shipping, as this is most likely the reason to the decrease in sales and revenue, due to an increase in clients insatisfaction with the service.
- ✓ Target our marketing strategy in those 21 of states with less than 10 clients.
- ✓ Increase the stock of Chevrolet, Ford and Toyota cars, as they are the top sellers.

