

SQL and Databases: Project Report

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Business Overview

Total Revenue	Total Orders	Total Customers	Avg Rating
48.6 M	1000	994	3.13
Last Quarter Revenue	Last Quarter Orders	Avg Days to Ship	% Good Feedback
8.5 M	199	98	21.5 %

Customer Metrics

Distribution of Customers across States

State	Number of Customers
California	97
Texas	97
Florida	86
New York	69
District of Columbia	35
Colorado	33

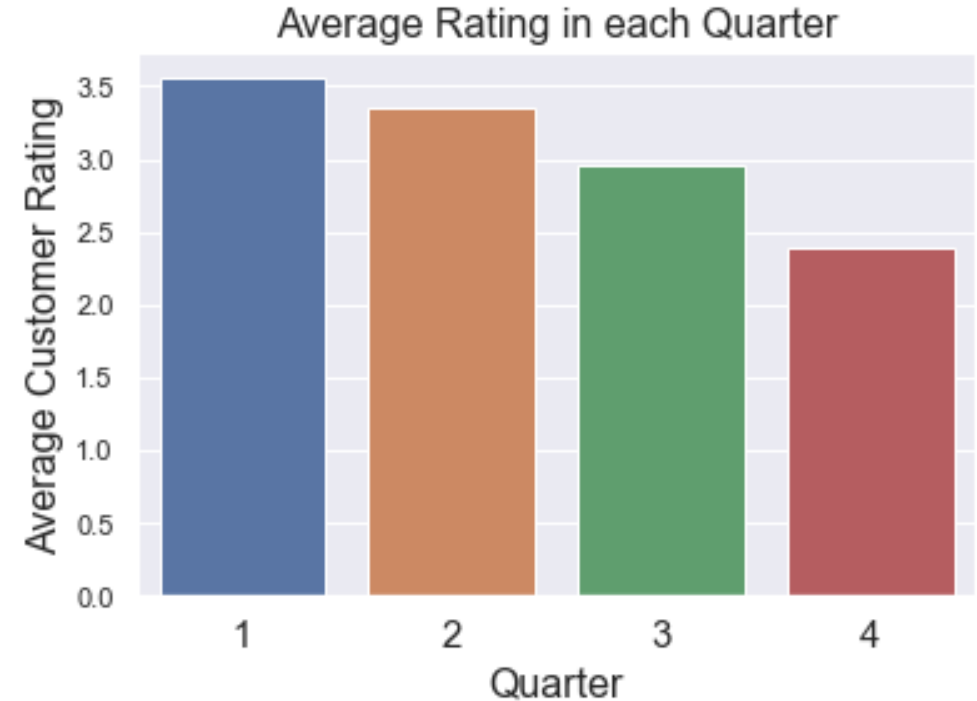


Observations / Findings

- California and Texas are the states with the biggest number of customers, with 97 customers, followed by Florida with 86 customers and New York with 69 customers.
- District of Columbia and Colorado are the 4th and 5th states in number of customers but have only around 30 customers.

Average Customer Rating by Quarter

Quarter	Avg Customer Rating
1	3.5
2	3.3
3	2.9
4	2.4



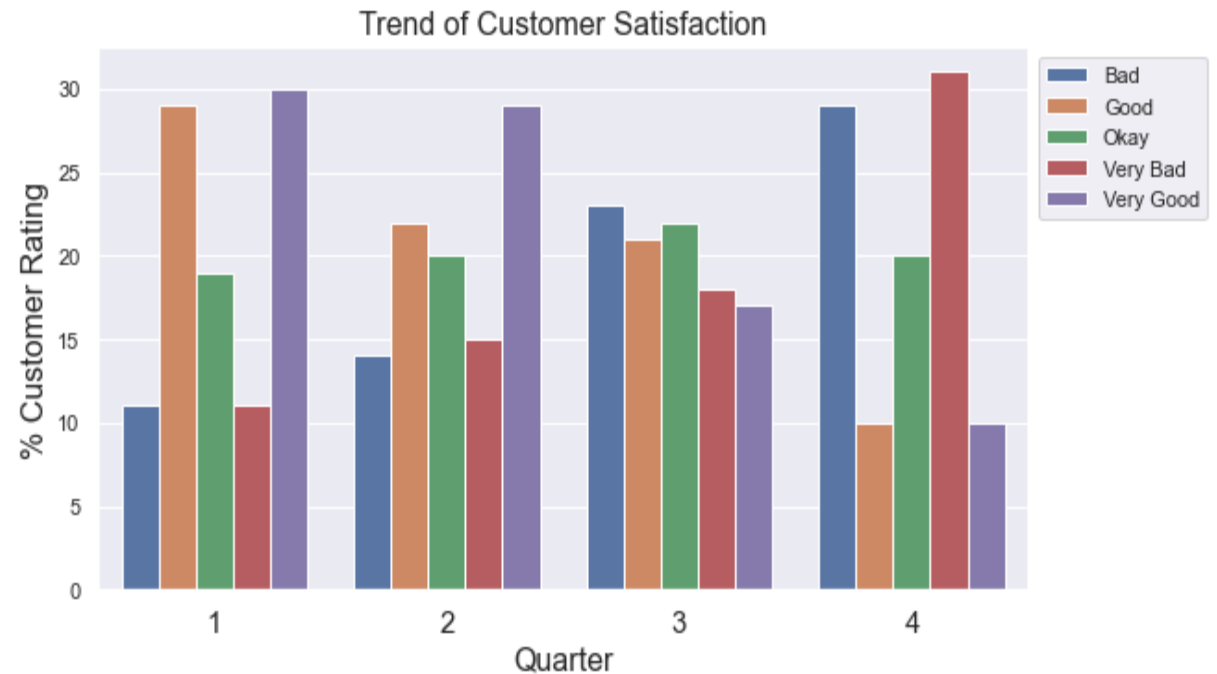
Observations / Findings

- The first quarter has the higher average customer rating, followed by the second quarter, third quarter and fourth quarter. The customer ratings are getting worse with each quarter, the customers are not satisfied with the company services.
- The company needs to understand what are the problems that are making the customers unsatisfied and work to solve this problems.

Trend of Customer Satisfaction

Note: The result shown below is first 6.

Quarter	Customer Feedback	% Customer Feedback
1	Bad	11 %
2	Bad	14 %
3	Bad	23 %
4	Bad	29 %
1	Good	29%
2	Good	22 %

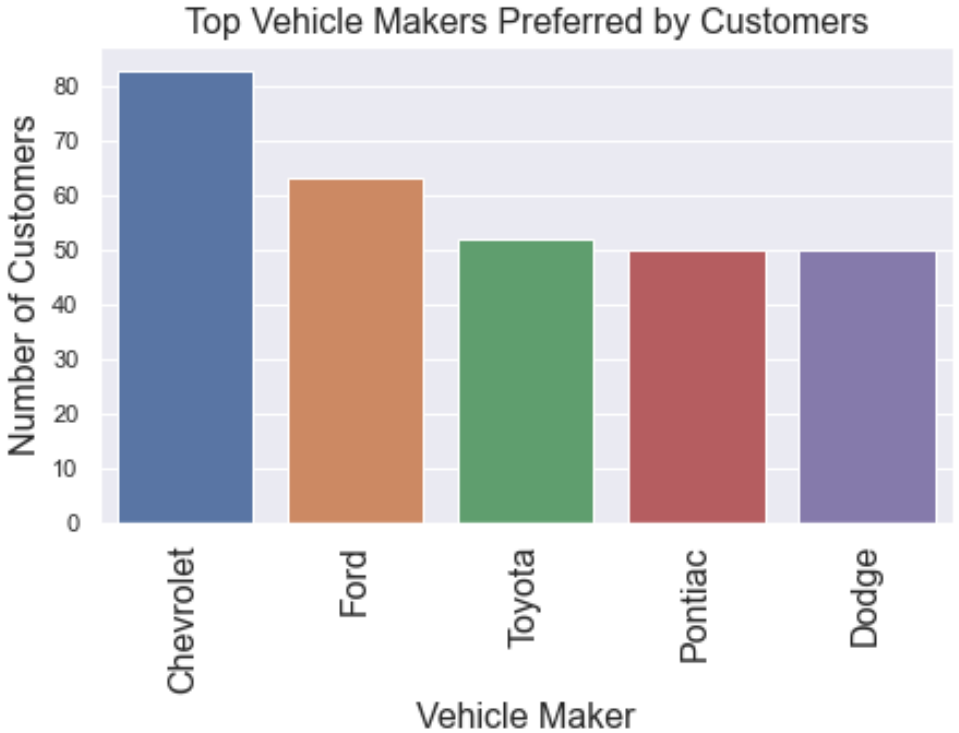


Observations / Findings

- The Bad and Very Bad customer feedback are getting higher every quarter. In the first quarter 11% of customers gave a Bad feedback and 11% gave a Very Bad feedback. In the fourth quarter 29% of the customers gave a Bad rating and 31% gave a Very Bad rating. Together we have 60% of the customers dissatisfied at the fourth quarter.
- The Good and Very Good customer feedback are getting lower every quarter. In the first quarter there were 29% Good ratings and 30% Very Good ratings. In the fourth quarter there were 10% Good and 10% Very Good feedback, which gives us only 20% of customers satisfied.
- The company needs to understand what are the problems that are making the customers unsatisfied and work to solve this problems.

Top Vehicle Makers Preferred by Customers

Vehicle Maker	Number of Customers
Chevrolet	83
Ford	63
Toyota	52
Pontiac	50
Dodge	50



Observations / Findings

- The customers preferred the vehicle makers Chevrolet, followed by Ford, Toyota, Pontiac and Dodge.

Most Preferred Vehicle Make in each State

State	Preferred Vehicle Maker
Arkansas	Pontiac, Volkswagen, Mitsubishi, GMC
California	Ford, Dodge, Audi, Nissan, Chevrolet
Colorado	Chevrolet
Connecticut	Chevrolet, Mercury, Maserati, Volvo
Delaware	Mitsubishi
Dist of Columbia	Chevrolet
Florida	Toyota
Georgia	Toyota
Hawaii	Ford, Toyota, Pontiac, Nissan, Cadillac, GMC
Idaho	Dodge
Illinois	Ford, GMC, Chevrolet
Indiana	Mazda
Iowa	Chrysler, Chevrolet, Hyundai, Isuzu, Dodge, Mazda, Porsche, Jeep, Ford, Pontiac, Subaru
Kansas	GMC, Lexus, Buick, Mercedes-Benz, Suzuki, Honda, Dodge, Volkswagen, Ford, Mazda, Maserati, Nissan, Saab

State	Preferred Vehicle Maker
Kentucky	Acura, Mercury, Audi, Ram, Volvo, Pontiac, Nissan, Mercedes-Benz.
Louisiana	BMW, Nissan, Ford, Pontiac, Kia
Maine	Mercedes-Benz
Maryland	Ford.
Massachusetts	Dodge, Chevrolet
Michigan	Ford
Minnessota	GMC
Mississippi	GMC, Dodge, Toyota
Missouri	Chevrolet
Montana	Chevrolet, Mitsubishi, Dodge
Nebraska	Chevrolet, Mercedes-Benz, Volkswagen, Nissan, Pontiac, Toyota, Cadillac
Nevada	Pontiac
New Hampshire	Chrysler, Lincoln, Lexus

Most Preferred Vehicle Make in each State

State	Preferred Vehicle Maker
New Jersey	Mercedes-Benz, Hyundai
New Mexico	Dodge
New York	Toyota, Pontiac
North Carolina	Volvo
North Dakota	Hyundai, Ford
Ohio	Chevrolet
Oklahoma	Toyota, Ferrari, Mazda
Oregon	Toyota
Pennsylvania	Toyota
South Carolina	Acura, Buick, BMW, Kia, Mazda, Mitsubishi, Dodge, Jaguar, Isuzu

State	Preferred Vehicle Maker
Tennessee	Mazda
Texas	Chevrolet
Utah	Volkswagen, Isuzu, Subaru, Lincoln, Chevrolet, Oldsmobile, Pontiac, Dodge, Buick
Vermont	Mazda
Virginia	Ford
Washington	Chevrolet
West Virginia	Mercedes-Benz
Winsconsin	Pontiac, Chevrolet, Acura, Mazda, Nissan, Cadillac, Dodge, Honda
Wyoming	Buick

Observations / Findings

- We can see that every state has its own preferences on a vehicle maker.
- In many states there is no consensus on a preferred vehicle maker. Instead, in this states we have more than one maker as preferred.
- In Texas the most preferred vehicle make is Chevrolet, in Florida is Toyota and in California we have five vehicle make tied as a first choice: Ford, Dodge, Audi, Nissan and Chevrolet.

Revenue Metrics

Trend of Purchases by Quarter

Quarter	Number of Orders
1	310
2	262
3	229
4	199

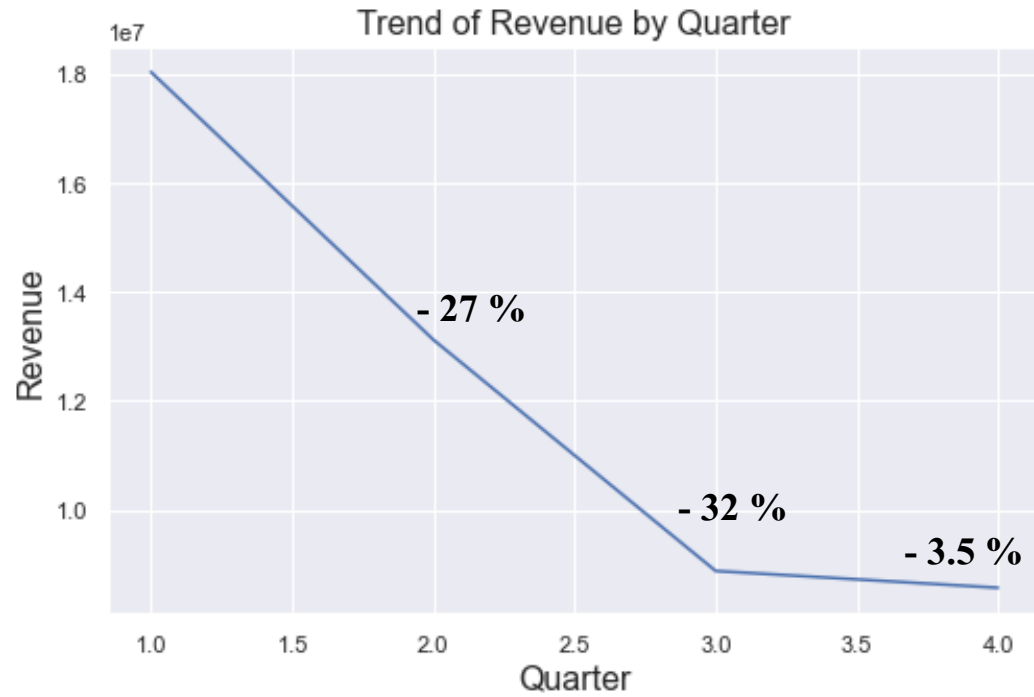


Observations / Findings

- The number of orders is reducing at each quarter.
- In the first quarter we had 310 orders, in the second quarter the number of orders fell to 262 and in the fourth quarter we had only 199 orders.

Quarter on Quater % Change in Revenue

Quarter	Revenue	% Change in Revenue
1	18 M	
2	13 M	- 27 %
3	8.9 M	- 32 %
4	8.6 M	- 3.5%



Observations / Findings

- The revenue is falling every quarter.
- The second and third quarter have the biggest drops in revenue.
- In the second quarter the revenue fell by 27% in comparison with the first quarter.
- In the third quarter the revenue fell by 32% in comparison with the second quarter.
- In the fourth quarter the revenue fell by 3.5% in comparison with the third quarter. The third and fourth quarter have almost the same revenue, with a small drop in the fourth quarter.

Trend of Revenue and Orders by Quarter

Quarter	Revenue	Number of Orders
1	18 M	310
2	13 M	262
3	8.9 M	229
4	8.6 M	199



Observations / Findings

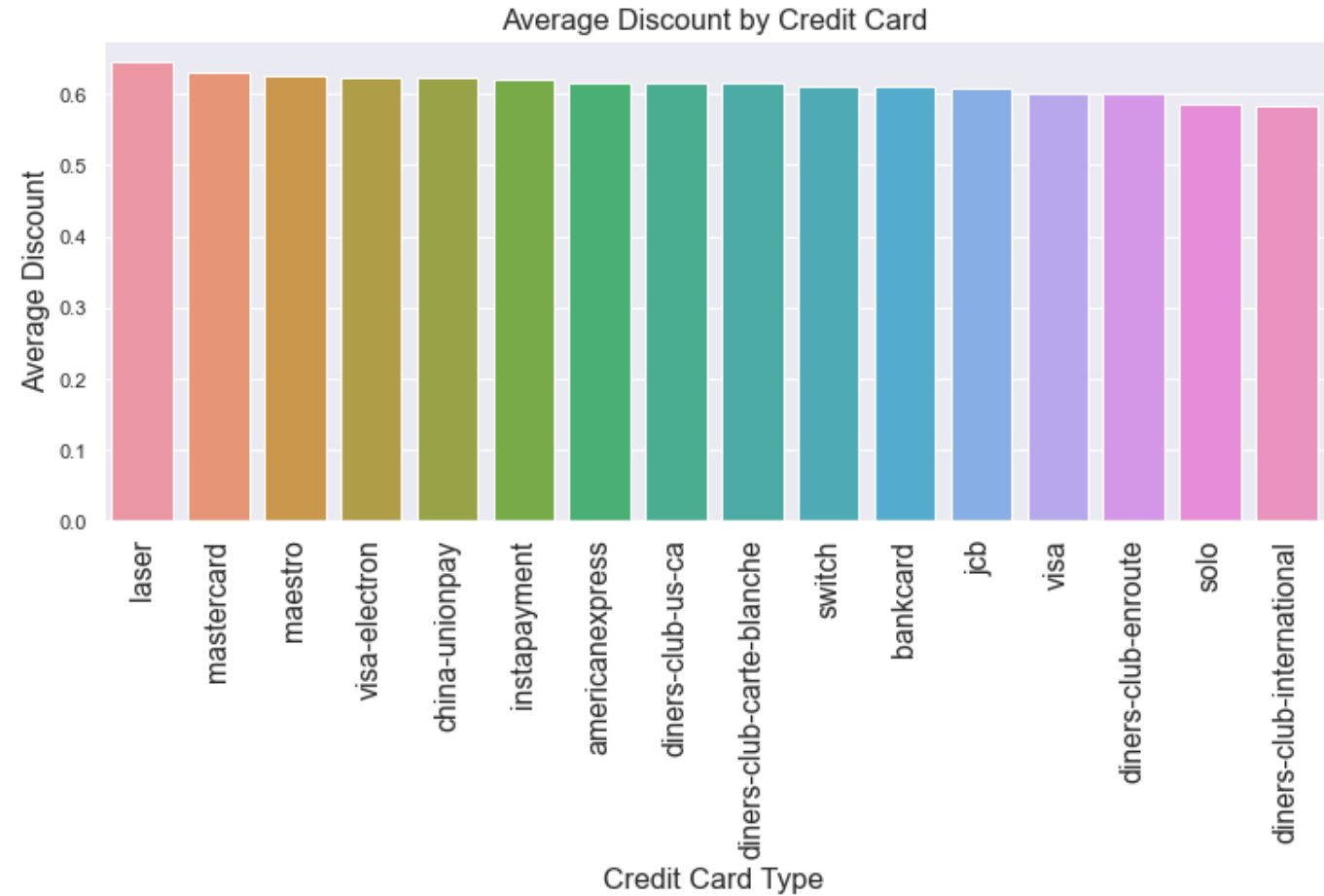
- The revenue and the number of orders are falling every quarter.
- The third and fourth quarter have almost the same revenue, with a small drop of revenue in the fourth quarter, even though the number of orders in the fourth quarter is smaller than the third quarter. Probably in the fourth quarter some customers bought more than one car in the same order.
- Since the number of orders keep falling New Wheels can expect falling revenues for the next quarters even though the revenue is almost stagnant in the last two quarters.

Shipping Metrics

Average Discount Offered by Credit Card Type

Note: The result shown below is first 9.

Credit Card Type	Average Discount
Laser	0.64
Mastercard	0.63
Maestro	0.62
Visa Electron	0.62
China Unionpay	0.62
Insta Payment	0.62
American Express	0.62
Diners Club US CA	0.61
Diners Club Carte Blanche	0.61

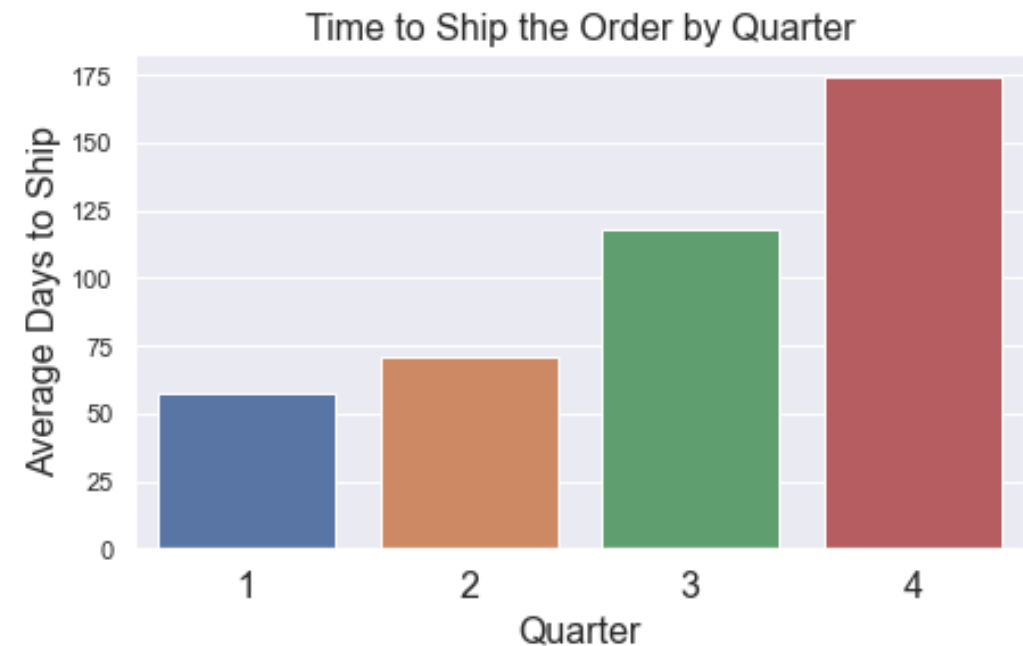


Observations / Findings

- The average discount offered by the credit cards is around 60%.
- The card that offered the biggest discount is Laser, with 64% discount in average.
- The card that offered the lowest discount is Diners Club International with 58% discount in average.

Time Taken to Ship Orders by Quarter

Quarter	Average days to ship
1	57
2	71
3	117
4	174



Observations / Findings

- The average days taken to ship the cars has increased in every quarter.
- In the first quarter the average time to ship the order is 57 days.
- In the second quarter the average time to ship the order is 71 days.
- In the third quarter the average time to ship the order is 117 days.
- In the fourth quarter the average time to ship the order is 174 days.
- The customer's satisfaction has decreased every quarter, and one of the factors is the increased time to ship the order. The customers are not happy to have to wait longer to receive their orders.

Insights and Recommendations

Insights

- California , Texas, Florida and New York are the states with the biggest number of customers.
- From the first quarter to the fourth quarter the average customer rating has fallen.
- The Bad and Very Bad feedback from customers are getting higher from the first quarter to the fourth quarter, from 22% to 60%.
- The Good and Very Good feedback from customers are getting lower from the first quarter to the fourth quarter, from 59% to 20%.
- The top vehicle makers preferred by customers are Chevrolet, Ford, Toyota, Pontiac and Dodge.
- Every state has its own preferences on a vehicle maker.
- In many states there is no consensus on a preferred vehicle maker, we have more than one maker as preferred.
- The number of purchases is reducing at each quarter.
- The revenue is falling every quarter, with a small drop from the third to the fourth quarter.
- Since the number of orders keep falling New Wheels can expect falling revenues for the next quarters even though the revenue is almost stagnant in the last two quarters.
- The average discount offered by the credit cards is around 60%.
- The average days taken to ship the cars has increased from the first quarter to the fourth quarter, from 2 months to almost 6 months. The customers are waiting very long to receive their cars, and this is one factor of unsatisfaction.

Recommendations

- To reduce the days to ship the order, and therefore increase the customer satisfaction, number of orders and revenue, New Wheels should:
 - Verify if the increase time to ship the order is related to one specific shipping mode (standard, same day, first class, second class) or shipping way (truck or air). Then the company needs to change the shipping mode or way or change the procedures to make it faster to ship the order.
 - Verify if New-Wheels is getting very long to give the car to the shipper, or if the app is taking too long to notify the shipper of a new order, so the shipper is receiving the car in a very late day. Then the company needs to change the procedures or fix the app to release the orders quicker.
 - Verify if some specific shippers are shipping the order later than the other shippers, then the company should maintain only the fastest shippers.
 - Verify if New-Wheels is selling cars that they don't have in stock. Then the company needs to have a better stock control and a way to block from the app the cars that are not in stock.
- To rise revenue selling more luxury cars, New Wheels should make a marketing campaign directed to customers who buy this type of car.
- To raise the revenue the company should lower the amount of discount given by the credit cards.

Recommendations

- To increase the number of orders New Wheels should have in stock the cars from the top preferred makers in each state.
- New Wheels should have more cars in stock and more shippers available in the states with the biggest number of customers.
- New Wheels should have a better customer service, to catalog and solve quickly the customers complaints, to raise the customer satisfaction.
- New Wheels should ask the customers the reason why they are giving a low rating, and work to solve the most common reasons.