

SQL and Database

PROJECT REPORT

**Pavithra Devi
PGPDSBA
Great Learning**

BUSINESS OVERVIEW:



AVERAGE DAYS TO SHIP



105.03235

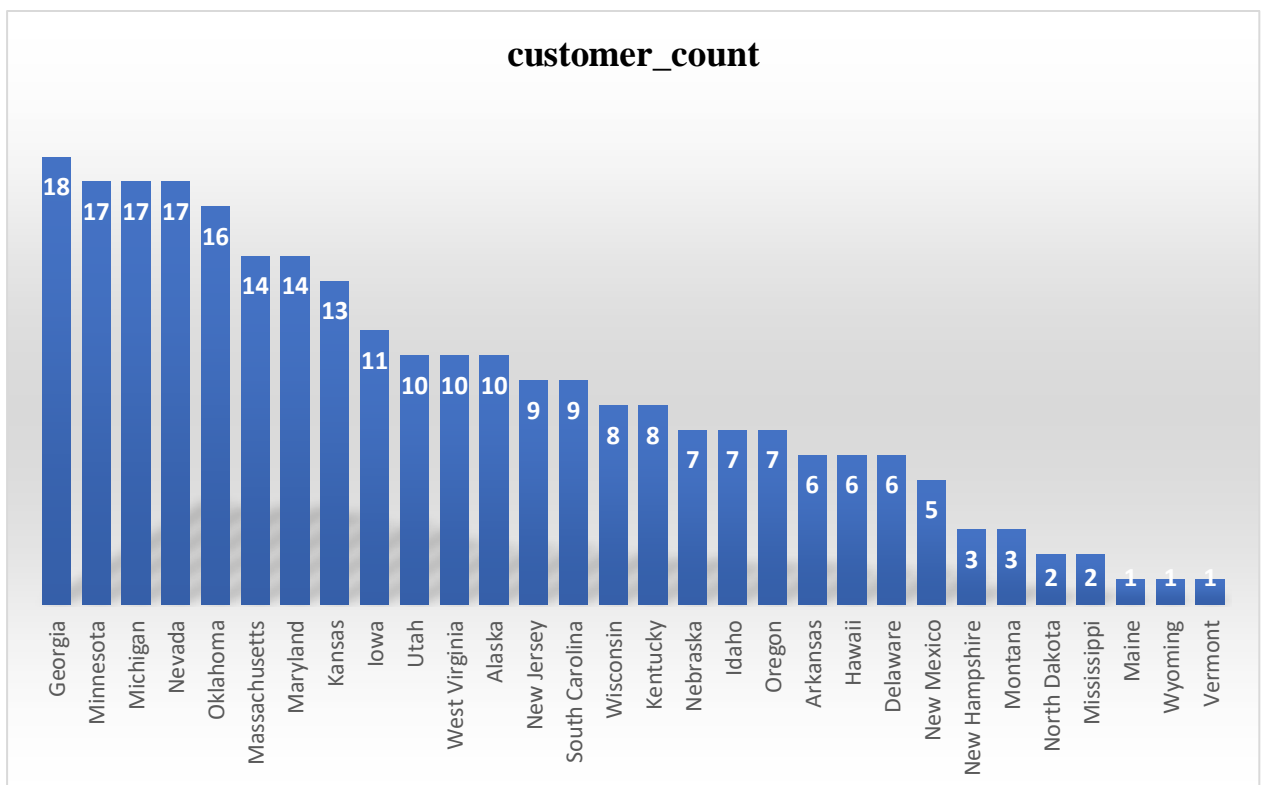
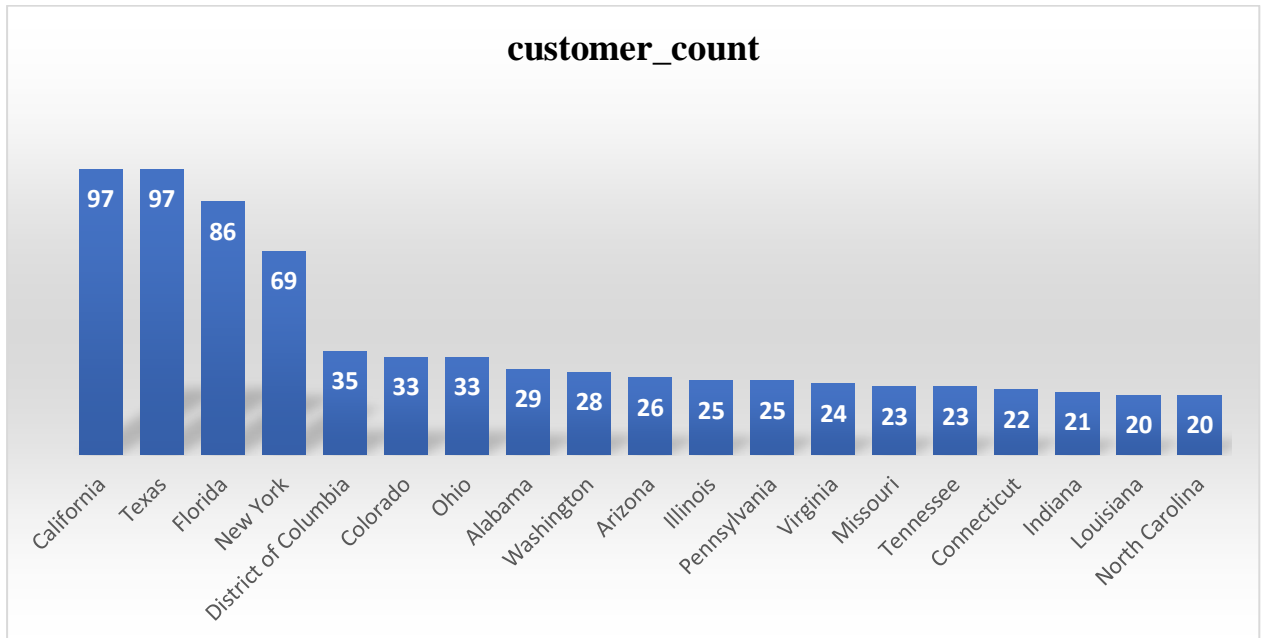
% GOOD FEEDBACK



44.1%

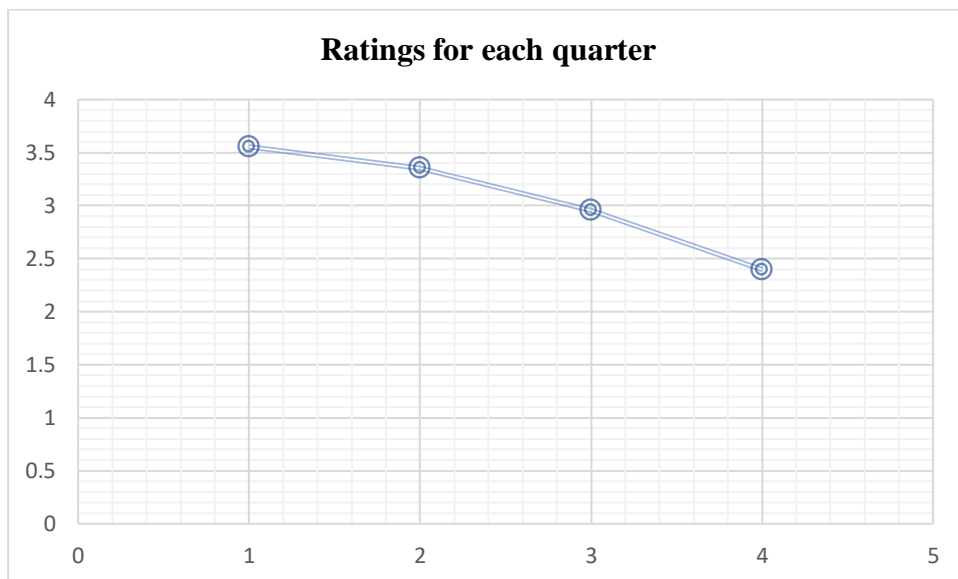
CUSTOMER METRICS

Distribution of customers across states:



- **Market Presence Across States:**
 - The distribution of customers indicates a widespread market presence, with a significant number of customers in states like California, Texas, Florida, and New York.
- **Regional Variances:**
 - Varied customer counts across states suggest regional differences in demand and market penetration.
- **High Customer Concentration:**
 - States with high customer counts, such as California and Texas, are crucial markets. Strategies to retain and attract customers in these states may have a substantial impact on overall sales.
- **Opportunities in Growth States:**
 - States with lower customer counts, like New Hampshire or North Dakota, represent growth opportunities.

Average rating given by customers in each quarter:



Summary of Quarterly Average Ratings:

1. Quarter 1:
 - Average Rating: 3.5548
 - Analysis: The first quarter starts with a relatively high average rating of 3.5548, indicating a positive sentiment among customers during this period.

2. Quarter 2:

- Average Rating: 3.355

- Analysis: The average rating decreases slightly to 3.355 in the second quarter. While still above 3, there is a potential shift or change in customer sentiment compared to the previous quarter.

3. Quarter 3:

- Average Rating: 2.9563

- Analysis: The third quarter experiences a more noticeable decrease in the average rating, dropping to 2.9563. This suggests a potential decline in customer satisfaction or an increase in negative feedback during this period.

4. Quarter 4:

- Average Rating: 2.397

- Analysis: The fourth quarter sees a further decrease in the average rating to 2.397. This is the lowest rating among the four quarters, indicating a challenging period with potentially heightened customer dissatisfaction.

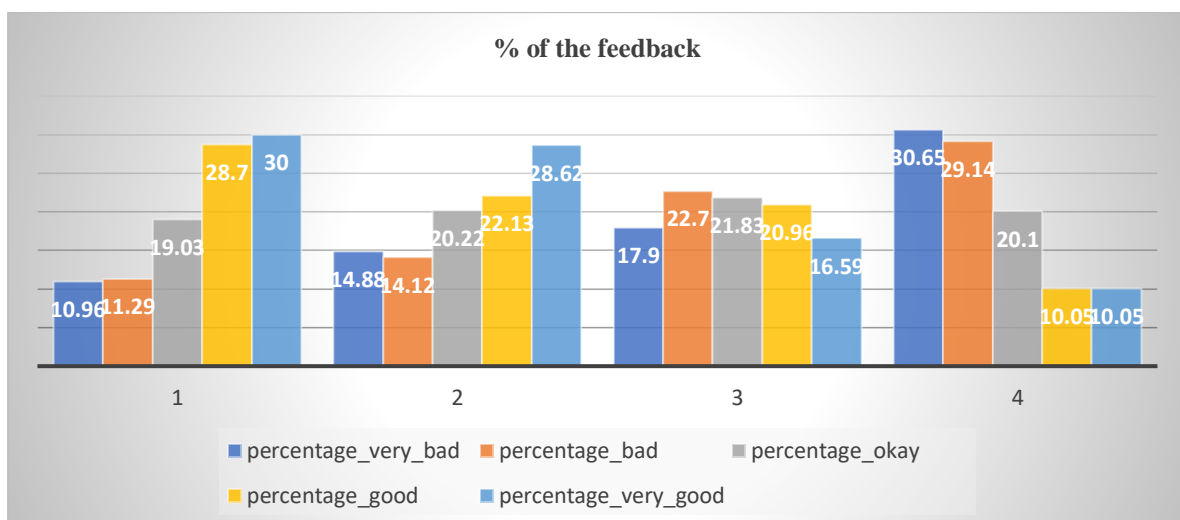
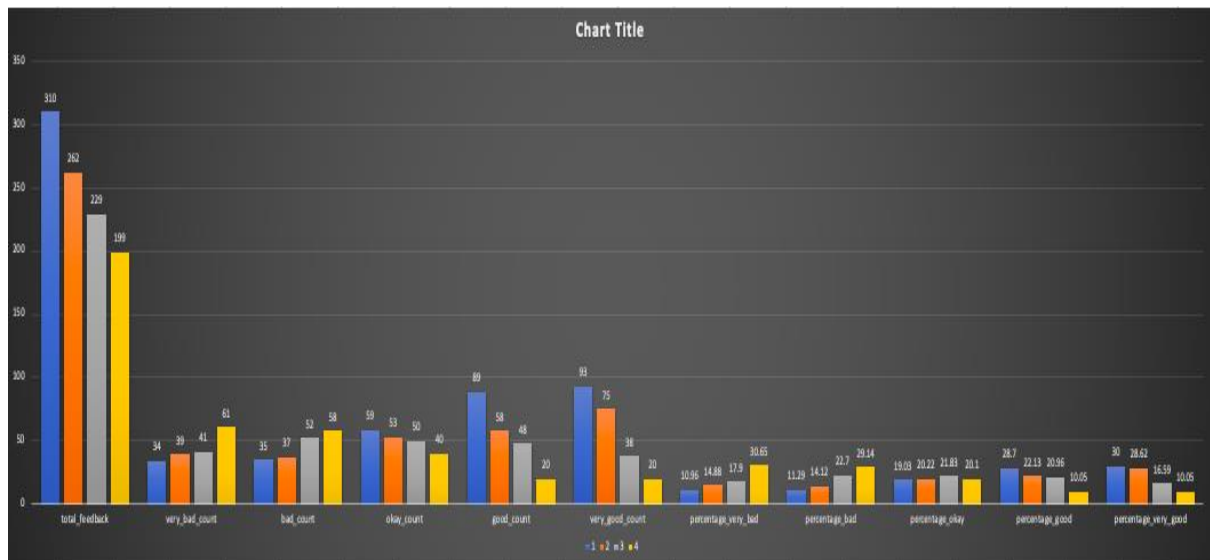
Overall Analysis:

- The quarterly trend suggests a decline in average ratings over the course of the year.

- A notable decrease is observed in the third and fourth quarters, warranting a closer examination of factors contributing to lower customer satisfaction during these periods.

- The insights gathered from customer feedback during these quarters can be instrumental in implementing corrective measures and improving overall customer experience.

Percentage of different types of customer feedback in each quarter:



Summary of Quarterly Customer Feedback:

1. Quarter 1:

- Total Feedback: 310
- Very Bad Count: 34 (10.96%)
- Bad Count: 35 (11.29%)
- Okay Count: 59 (19.03%)
- Good Count: 89 (28.7%)
- Very Good Count: 93 (30%)
- Key Insights:
 - Majority of feedback falls into positive categories (Good and Very Good).
 - A balanced distribution across different feedback categories.

2. Quarter 2:

- Total Feedback: 262
- Very Bad Count: 39 (14.88%)
- Bad Count: 37 (14.12%)
- Okay Count: 53 (20.22%)
- Good Count: 58 (22.13%)
- Very Good Count: 75 (28.62%)
- Key Insights:
 - A slight increase in the percentage of Very Bad and Bad feedback

compared to the first quarter.

- Positive feedback still dominates, but there's a need to address the increase in negative feedback.

3. Quarter 3:

- Total Feedback: 229
- Very Bad Count: 41 (17.9%)
- Bad Count: 52 (22.7%)
- Okay Count: 50 (21.83%)
- Good Count: 48 (20.96%)
- Very Good Count: 38 (16.59%)
- Key Insights:
 - Substantial increases in Very Bad and Bad feedback compared to previous

quarters.

- There's a notable decline in positive feedback.

4. Quarter 4:

- Total Feedback: 199
- Very Bad Count: 61 (30.65%)
- Bad Count: 58 (29.14%)
- Okay Count: 40 (20.1%)
- Good Count: 20 (10.05%)
- Very Good Count: 20 (10.05%)
- Key Insights:
 - Significant spikes in Very Bad and Bad feedback.

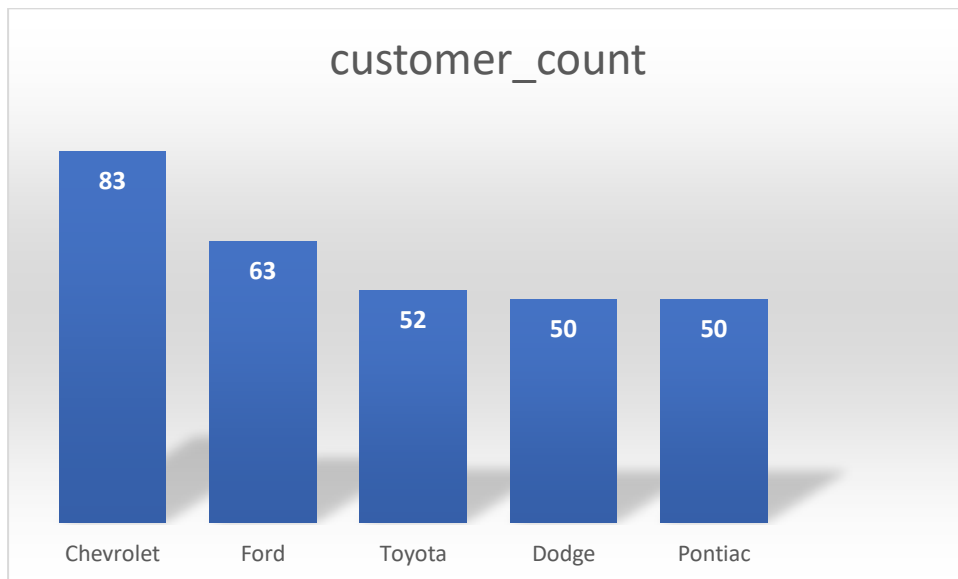
- Positive feedback sharply decreases, indicating potential challenges in customer satisfaction.

Overall Analysis:

- There is a concerning trend of increasing dissatisfaction, especially in the last two quarters.

- The fourth quarter stands out with a notable surge in Very Bad and Bad feedback.

Top 5 vehicle makers preferred by the customer:



Top 5 Preferred Vehicle Makes:

1. Chevrolet: 83 customers
2. Ford: 63 customers
3. Toyota: 52 customers
4. Dodge: 50 customers
5. Pontiac: 50 customers

Insights:

- Chevrolet leads in customer preference.
- Ford, Toyota, Dodge, and Pontiac follow closely.
- Focus marketing efforts on these top 5 choices for enhanced visibility and customer engagement.

Most preferred vehicle make in each state:

- **Alabama:** Dodge
- **Alaska:** Chevrolet
- **Arizona:** Pontiac
- **Arkansas:** Chevrolet
- **California:** Audi
- **Colorado:** Chevrolet
- **Connecticut:** Volvo
- **Delaware:** Mitsubishi
- **District of Columbia:** Chevrolet
- **Florida:** Toyota
- **Georgia:** Toyota

- **Hawaii:** Cadillac
- **Idaho:** Dodge
- **Illinois:** Ford
- **Indiana:** Mazda
- **Iowa:** Chevrolet
- **Kansas:** Buick
- **Kentucky:** Acura
- **Louisiana:** BMW
- **Maine:** Mercedes-Benz
- **Maryland:** Ford
- **Massachusetts:** Dodge
- **Michigan:** Ford
- **Minnesota:** GMC
- **Mississippi:** Dodge
- **Missouri:** Chevrolet
- **Montana:** Chevrolet
- **Nebraska:** Cadillac
- **Nevada:** Pontiac
- **New Hampshire:** Chrysler
- **New Jersey:** Hyundai
- **New Mexico:** Dodge
- **New York:** Toyota
- **North Carolina:** Volvo
- **North Dakota:** Ford
- **Ohio:** Chevrolet
- **Oklahoma:** Toyota
- **Oregon:** Toyota
- **Pennsylvania:** Toyota
- **South Carolina:** Acura
- **Tennessee:** Mazda
- **Texas:** Chevrolet
- **Utah:** Buick
- **Vermont:** Mazda
- **Virginia:** Ford
- **Washington:** Chevrolet
- **West Virginia:** Mercedes-Benz
- **Wisconsin:** Acura
- **Wyoming:** Buick

States with More Than One Preferred Vehicle Make:

1. Arkansas:

- Preferred Vehicle Makes: Chevrolet, GMC, Mitsubishi, Pontiac, Suzuki, Volkswagen.
- Conclusion: The state of Arkansas has a diverse preference for various vehicle makes, with Chevrolet being a prominent choice.

2. California:

- Preferred Vehicle Makes: Audi, Nissan, Chevrolet, Dodge, Ford.
- Conclusion: California exhibits a diverse market with preferences for luxury (Audi) and popular mass-market brands (Nissan, Chevrolet, Dodge, Ford).

3. Hawaii:

- Preferred Vehicle Makes: Cadillac, Ford, GMC, Nissan, Pontiac, Toyota.
- Conclusion: Hawaii has a mix of preferences, with Cadillac representing luxury and Ford, GMC, Nissan, Pontiac, and Toyota catering to various consumer segments.

4. Iowa:

- Preferred Vehicle Makes: Chevrolet, Chrysler, Dodge, Ford, Hyundai, Isuzu, Jeep, Mazda, Pontiac, Porsche, Subaru.
- Conclusion: Iowa showcases a diverse set of preferences, with a notable presence of domestic brands like Chevrolet, Ford, and Chrysler.

5. Kansas:

- Preferred Vehicle Makes: Buick, Dodge, Ford, GMC, Honda, Lexus, Maserati, Mazda, Mercedes-Benz, Nissan, Saab, Suzuki, Volkswagen.
- Conclusion: Kansas has a wide array of preferred vehicle makes, with a significant presence of domestic and international brands.

6. Nebraska:

- Preferred Vehicle Makes: Cadillac, Chevrolet, Mercedes-Benz, Nissan, Pontiac, Toyota, Volkswagen.
- Conclusion: Nebraska's preferences include a mix of domestic and foreign brands, with Chevrolet and Toyota being notable choices.

7. South Carolina:

- Preferred Vehicle Makes: Acura, BMW, Buick, Dodge, Isuzu, Jaguar, Kia, Mazda, Mitsubishi.
- Conclusion: South Carolina's preferences span luxury (Acura, BMW, Jaguar) and other popular brands like Buick, Dodge, and Kia.

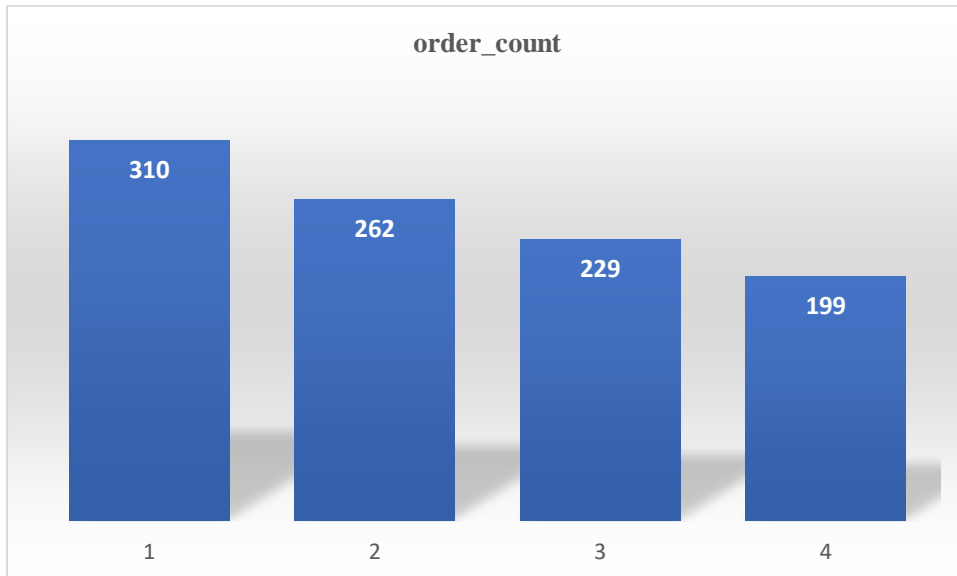
8. Utah:

- Preferred Vehicle Makes: Buick, Chevrolet, Dodge, Isuzu, Lincoln, Maybach, Oldsmobile, Pontiac, Subaru, Volkswagen.
- Conclusion: Utah's preferences cover domestic and international brands, with Chevrolet, Dodge, and Subaru making a significant impact.

However, considering the overall count of preferred vehicle makes in each state, **Chevrolet** emerges as a consistently high-demanding brand, appearing in multiple states such as Arkansas, California, Iowa, Kansas, and Nebraska.

REVENUE AND ORDERS METRICS:

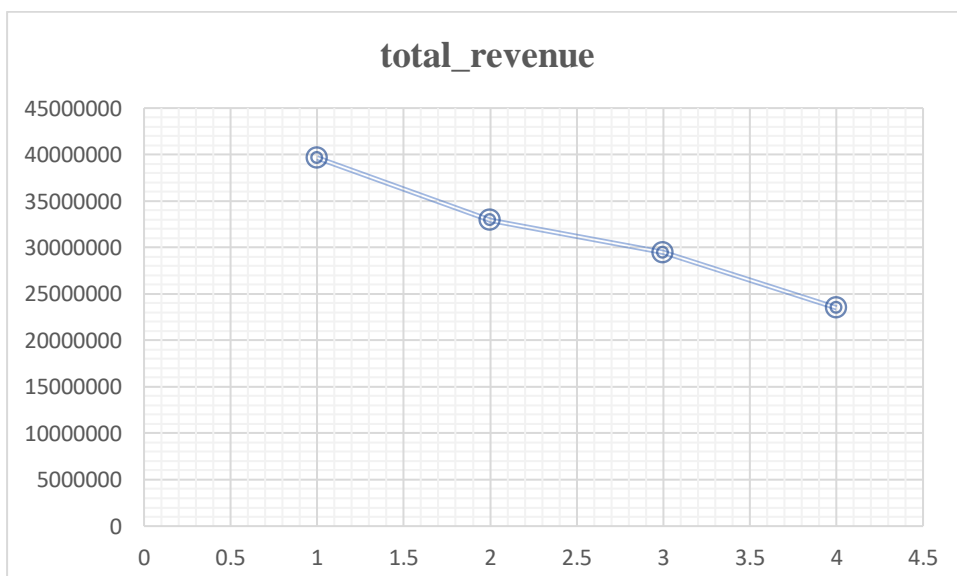
The trend of purchases by quarters:

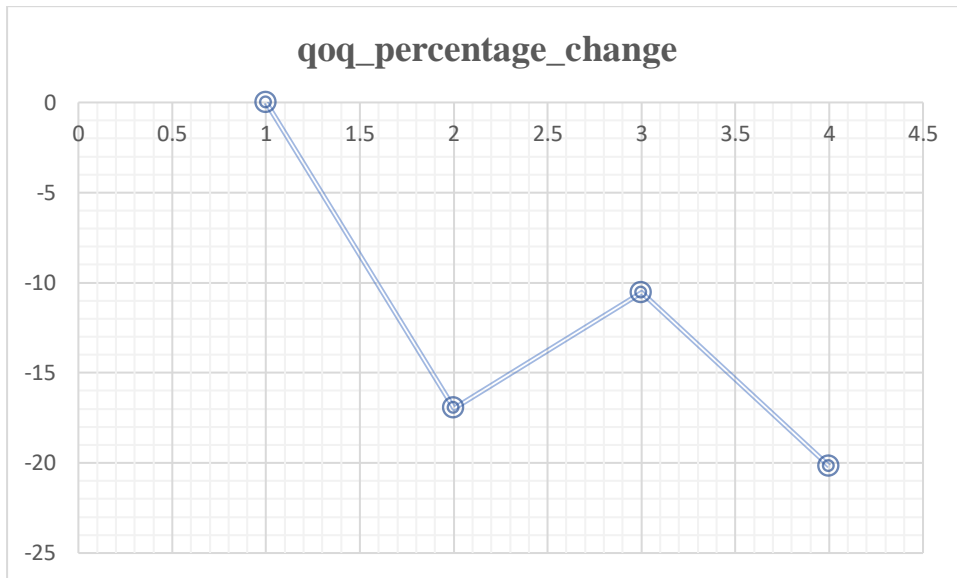


- A gradual decline in order counts is observed over the four quarters.
- Quarter 1 has the highest order count, while Quarter 4 shows a notable decrease.

Quarter over quarter % change in revenue:

Quarter over Quarter percentage change in revenue means what is the change in revenue from the subsequent quarter to the previous quarter in percentage.





1. **Quarter 1:**
 - **Total Revenue:** \$39,637,630.97
2. **Quarter 2:**
 - **Total Revenue:** \$32,913,737.76
 - **Quarter Over Quarter (QoQ) Percentage Change:** -16.96%
3. **Quarter 3:**
 - **Total Revenue:** \$29,435,427.48
 - **Quarter Over Quarter (QoQ) Percentage Change:** -10.56%
4. **Quarter 4:**
 - **Total Revenue:** \$23,496,008.22
 - **Quarter Over Quarter (QoQ) Percentage Change:** -20.177%

Key Insights:

- Quarter 1 starts with the highest total revenue.
- Subsequent quarters experience a decline in revenue, with Quarter 4 showing the most significant decrease.
- QoQ percentage change indicates the rate of decrease in revenue from one quarter to the next.

Trend of revenue and orders by quarters:

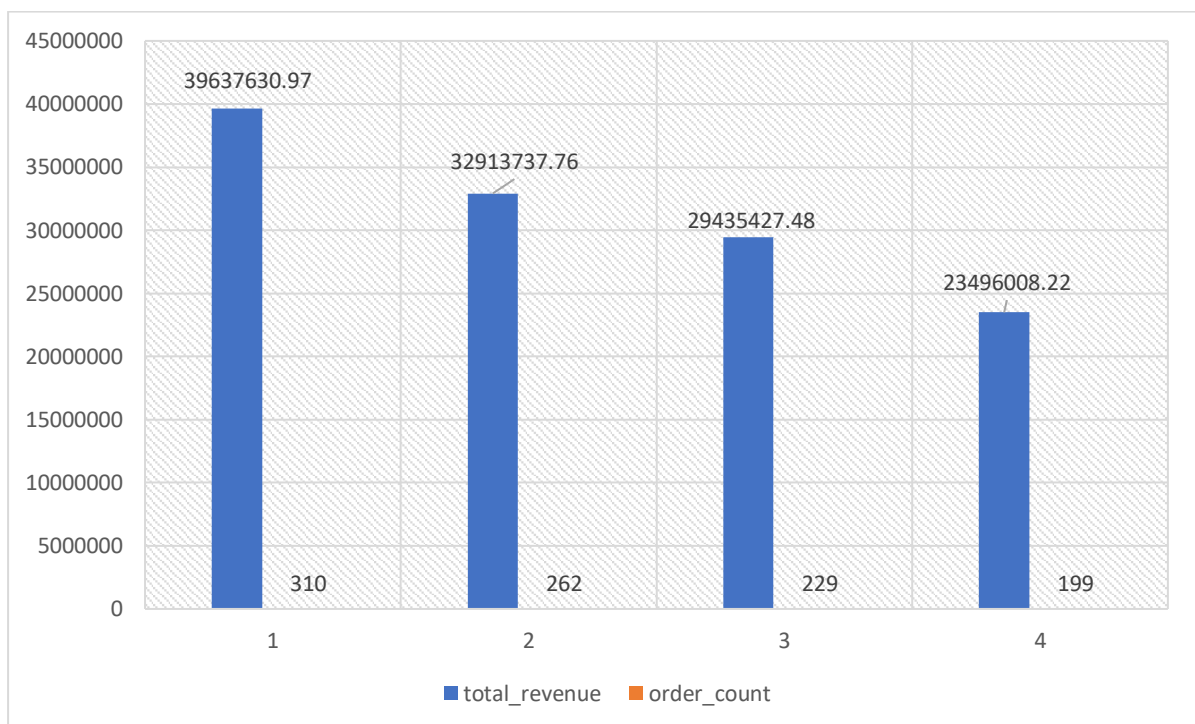
1. **Quarter 1:**
 - **Total Revenue:** \$39,637,630.97
 - **Order Count:** 310
2. **Quarter 2:**
 - **Total Revenue:** \$32,913,737.76
 - **Order Count:** 262

3. Quarter 3:
- Total Revenue: \$29,435,427.48
 - Order Count: 229

4. Quarter 4:
- Total Revenue: \$23,496,008.22
 - Order Count: 199

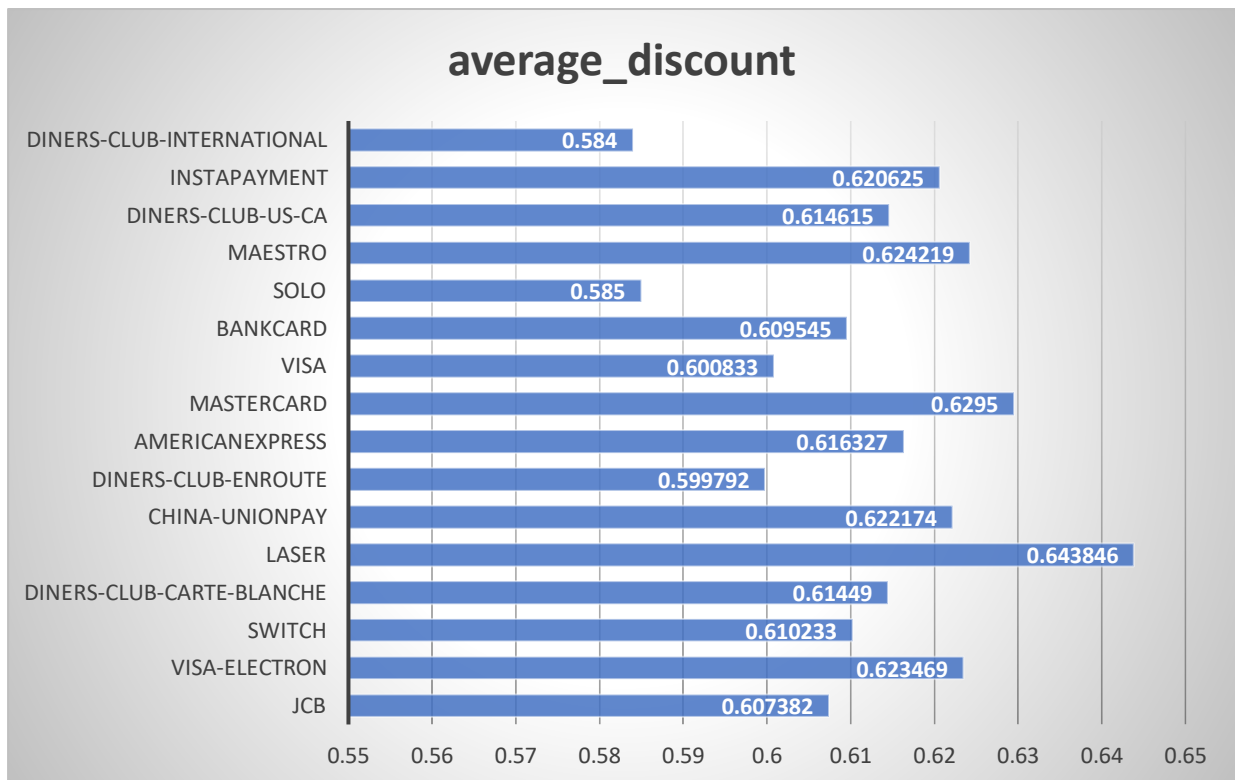
Key Insights:

- Revenue and order counts exhibit a declining trend over the four quarters.
- Quarter 1 has the highest revenue and order count.
- Quarter 4 shows the most significant decrease in both revenue and order count.



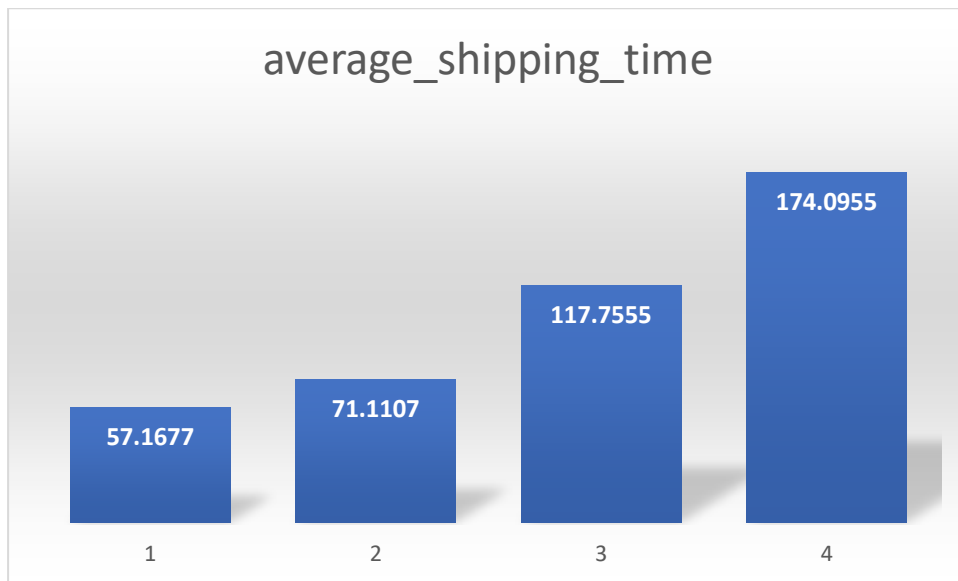
SHIPPING METRICS:

Average discount offered for different types of credit cards:



- Laser has the highest average discount, indicating potentially special promotions or partnerships.
- Diners Club International has the lowest average discount among the listed credit card types.
- Differences in average discounts may influence customer payment preferences.

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



1.	Quarter 1:	
	o	Average Shipping Time: 57.1677 days
2.	Quarter 2:	
	o	Average Shipping Time: 71.1107 days
3.	Quarter 3:	
	o	Average Shipping Time: 117.7555 days
4.	Quarter 4:	
	o	Average Shipping Time: 174.0955 days

- The average shipping time increases significantly from Quarter 1 to Quarter 4.
- A notable increase in shipping time in the later quarters could contribute to a decline in customer trust and satisfaction.
- Extended shipping times may lead to a decrease in customer loyalty and repeat purchases, influencing the overall sales and revenue decline observed.

INSIGHTS AND RECOMMENDATIONS:

1. Customer Distribution Across States:

- Insight: Customer distribution varies across states, with significant numbers in California and Texas.
- Recommendation: Focus targeted marketing campaigns in states with lower customer counts to expand reach.

2. Average Customer Rating:

- Insight: Average ratings decline over quarters, signaling potential satisfaction issues.
- Recommendation: Conduct a thorough analysis of customer feedback to identify and address specific pain points.

3. Percentage Change in Customer Feedback:

- Insight: Dissatisfaction increases in later quarters, especially in Very Bad and Bad feedback.
- Recommendation: Implement corrective actions based on feedback analysis and enhance customer support.

4. Preferred Vehicle Makes:

- Insight: Chevrolet, Ford, Toyota, Dodge, and Pontiac are top preferences.
- Recommendation: Strengthen marketing strategies for these brands, ensuring adequate inventory and promotions.

5. Shipping Time and Sales Decline:

- Insight: Longer shipping times coincide with a decline in sales and revenue.
- Recommendation: Optimize logistics, improve shipping transparency, and prioritize customer communication.

6. Order Count Trend:

- Insight: Order counts decrease over quarters, indicating potential challenges in demand.
- Recommendation: Launch targeted promotions, discounts, or loyalty programs to stimulate sales.

7. Quarter Over Quarter Revenue Change:

- Insight: Revenue experiences a consistent decline over quarters.
- Recommendation: Analyze cost structures, explore cost-saving measures, and implement revenue-generating initiatives.

8. Average Discount by Credit Card Type:

- Insight: Varying average discounts for different credit card types.
- Recommendation: Tailor promotions based on credit card preferences, considering potential partnerships.

9. Quarterly Average Shipping Time:

- Insight: A significant increase in shipping time correlates with declining sales.
- Recommendation: Streamline shipping processes, communicate transparently, and optimize logistics.

Overall Recommendations:

- Leverage customer feedback and data analysis to implement targeted improvements in product quality, service, and shipping.
- Prioritize customer communication and transparency to build trust.
- Collaborate with key vehicle makers for joint marketing efforts.
- Continuously monitor and analyze data to adapt strategies in response to market dynamics.

By addressing these insights and recommendations, New-Wheels can enhance customer satisfaction, stimulate sales, and position itself for sustained growth in the competitive market.