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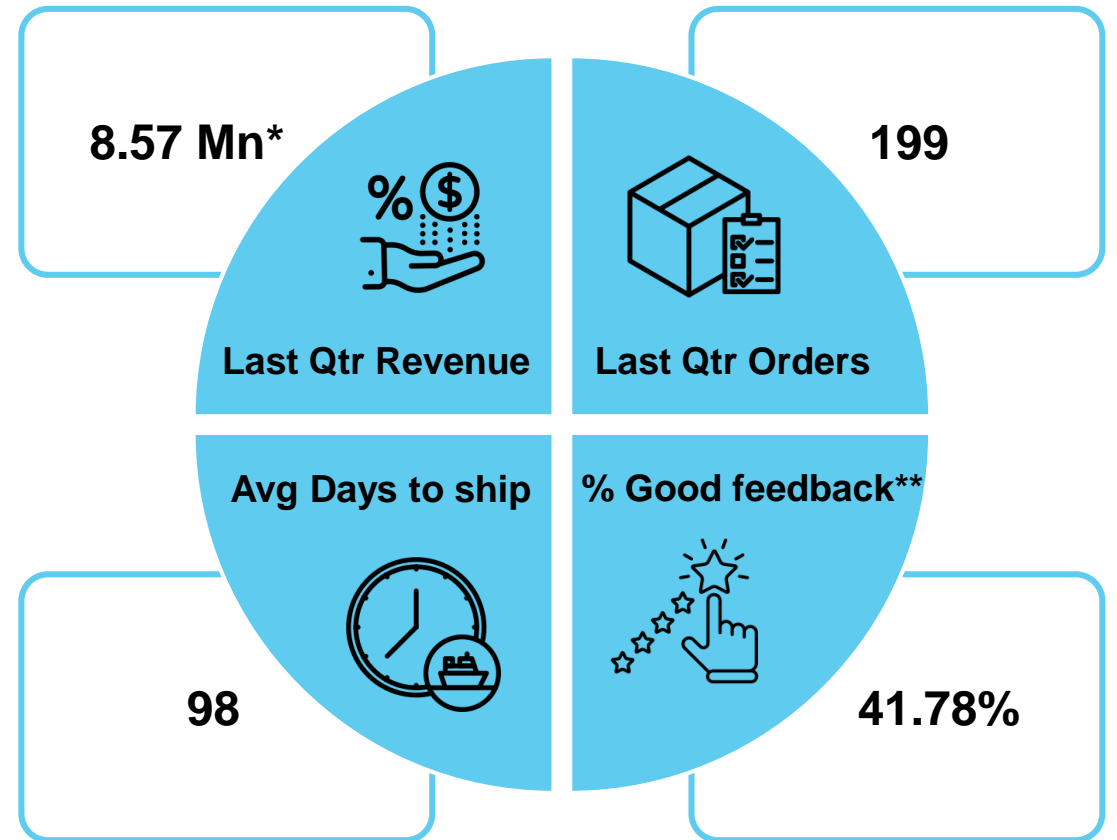
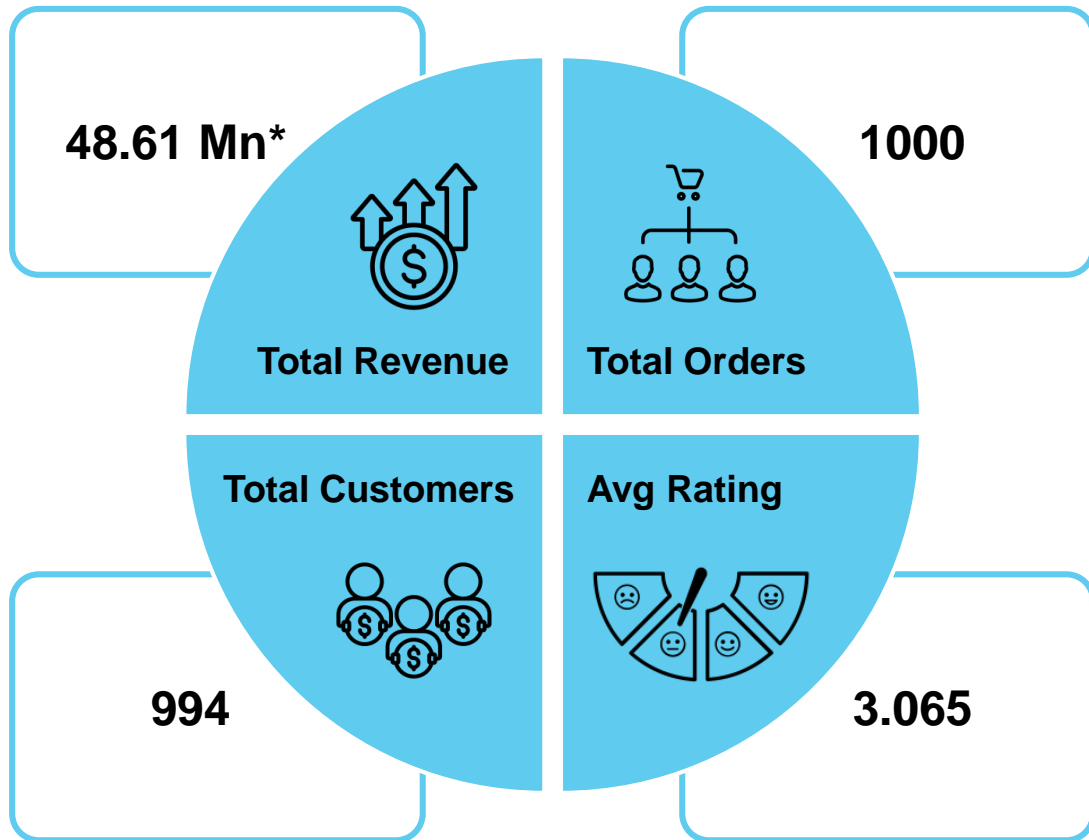
Project Report

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PGPDSBA Jan23

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Business Overview



##Note : Mn* represents in Millions

% Good Feedback** includes combined ratings for "Very Good" and "Good" among all available options

Customer Metrics



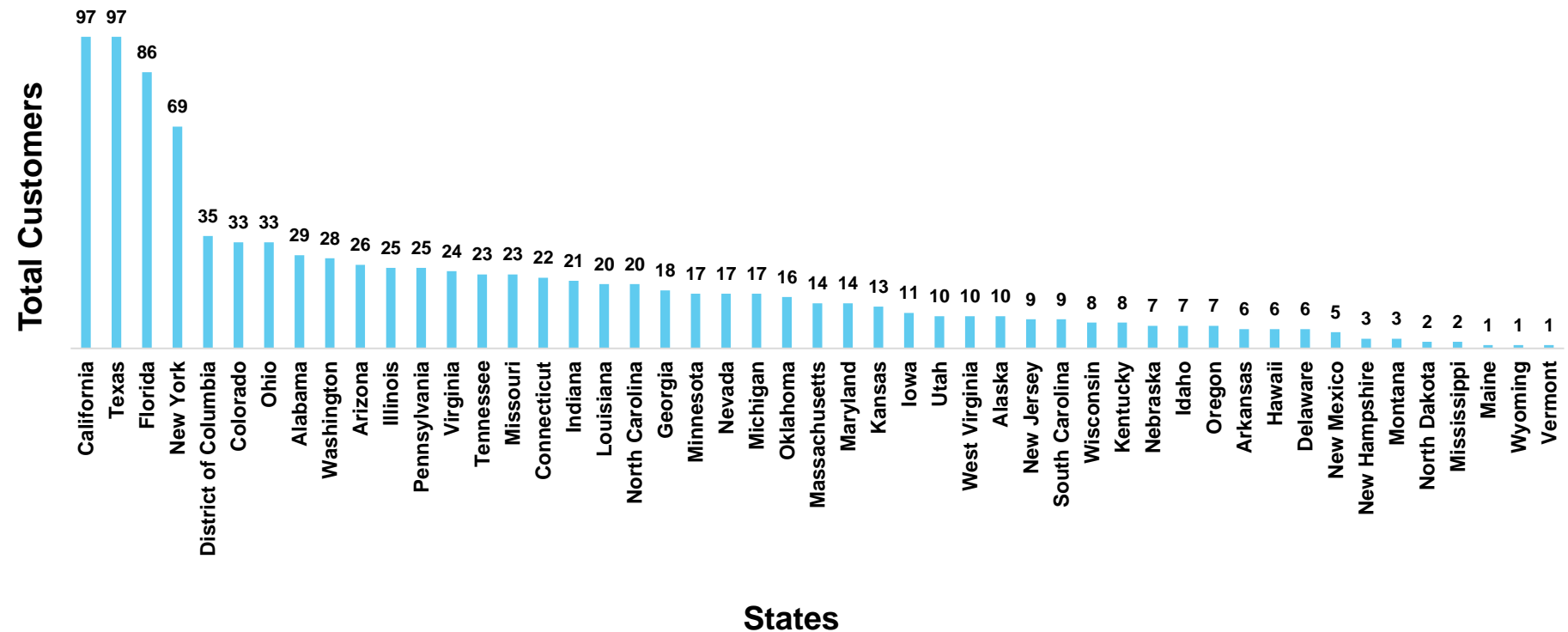


Distribution of Customers across states

Observations:

- **California** and **Texas** are the states with the **highest number of customers**, both having 97 customers each. This indicates that these states have a significant customer base for the vehicle business
- **Florida** follows closely with 86 customers, further solidifying its position as one of the **top three states** with a substantial customer count.
- There are several states with **very low customer counts**, such as **Maine, Wyoming, and Vermont**, each having only one customer. It might be worth investigating why these states have such a low customer presence and explore opportunities for growth in these areas.

Customer count (by state)

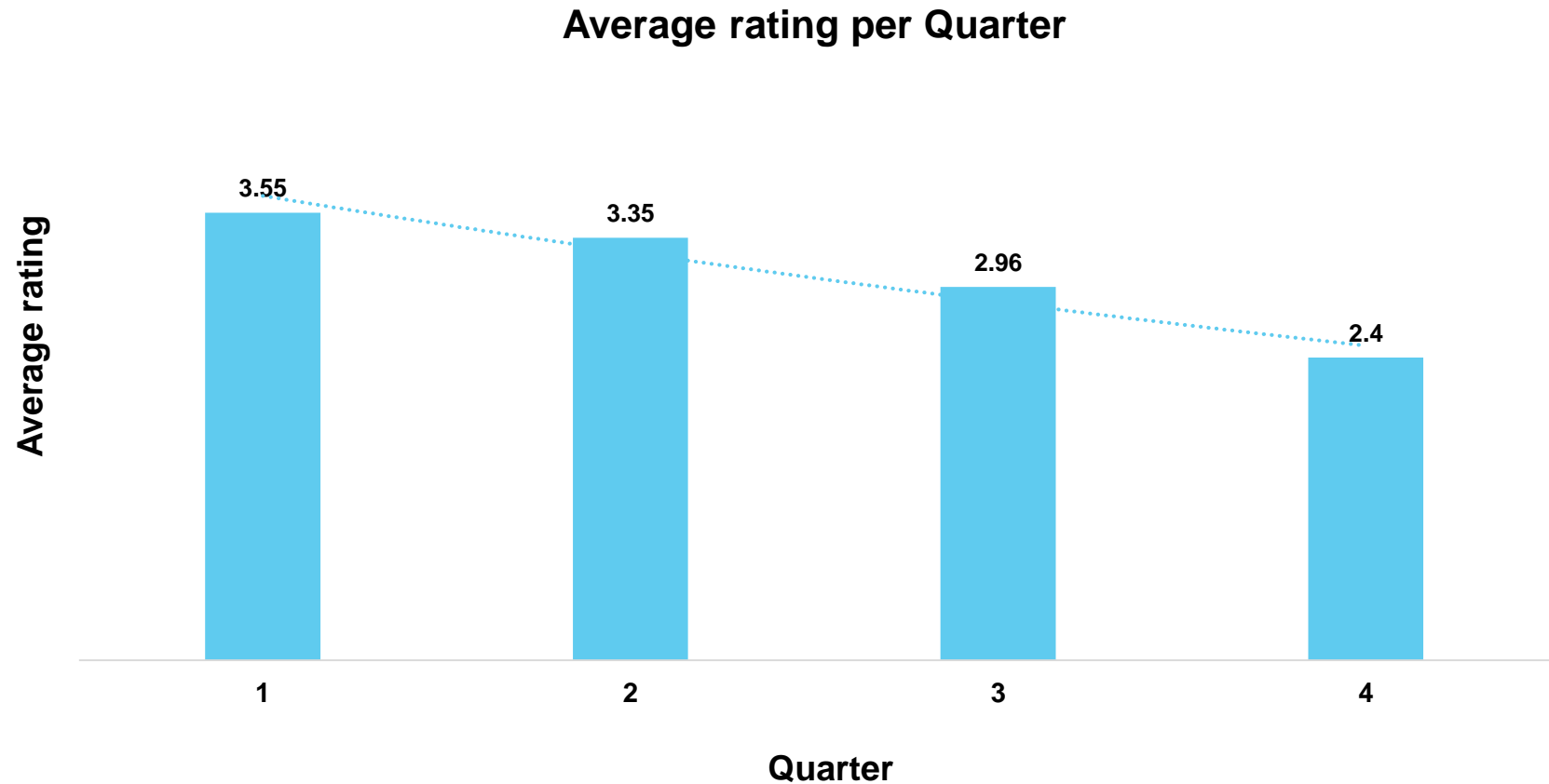


Average Customer rating by Quarter



Observations:

- The average rating shows a **decreasing trend over the quarters**. It started at **3.55 in Quarter 1** and gradually declined to **2.4 in Quarter 4**. This suggests a potential dissatisfaction towards vehicle makers
- The **largest drop** in average rating occurred **between Quarter 1 and Quarter 3**. It decreased by 0.59 points during this period
- **Quarter 4 has the lowest average rating** of all the quarters, indicating that it was the least satisfactory rated period. It is important to analyze what factors contributed to this drop and take necessary actions to improve the ratings in the subsequent quarters

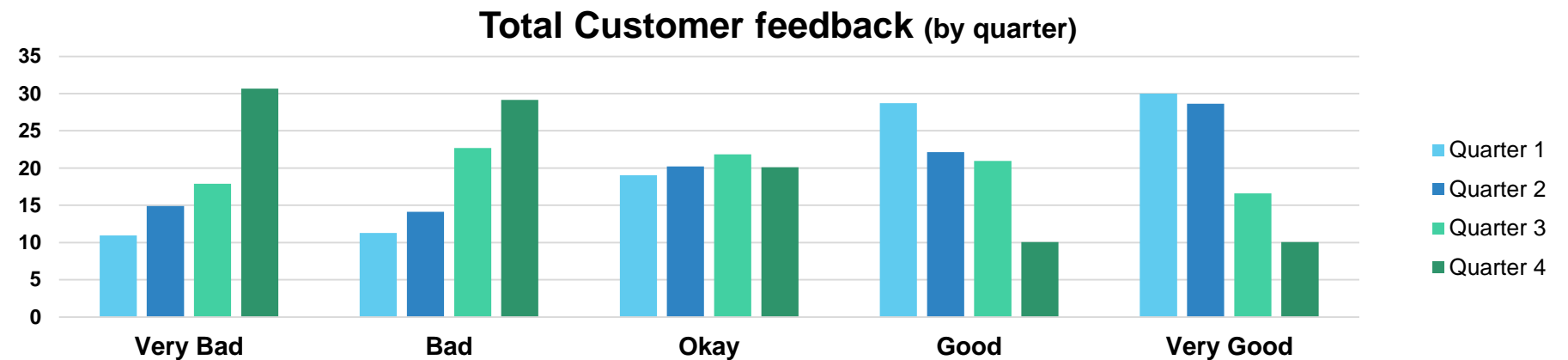
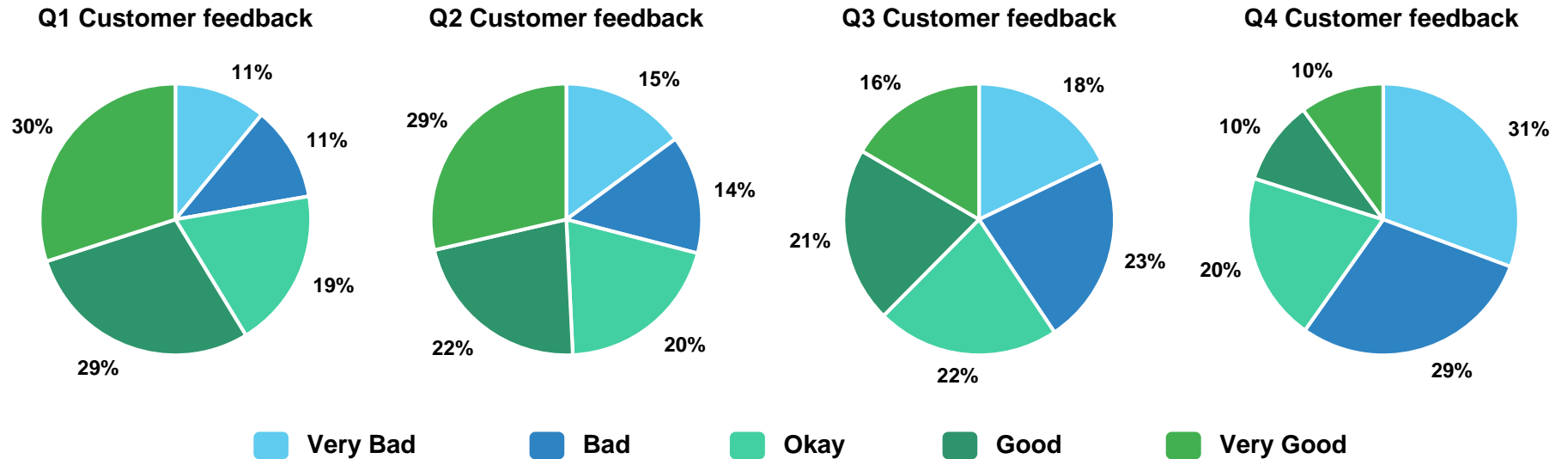


Customer satisfaction trends



Observations:

- **Customer satisfaction**, as measured by feedback percentage, seems to have **fluctuated over the four quarters**
- The percentage of **"Very Good"** and **"Good"** categories **declined from Quarter 1 to Quarter 4**, indicating a potential need for attention to retain high satisfaction levels
- The **"Okay"** category remained **relatively stable** over the four quarters, showing a small variation in percentages
- In **Quarter 4**, the percentage of **"Very Bad"** and **"Bad"** feedback **increases significantly**, while the percentage of **"Very Good"** and **"Good"** feedback drops compared to other quarters. This might indicate that the **vehicle maker faces challenges** in maintaining high **customer satisfaction** during this period



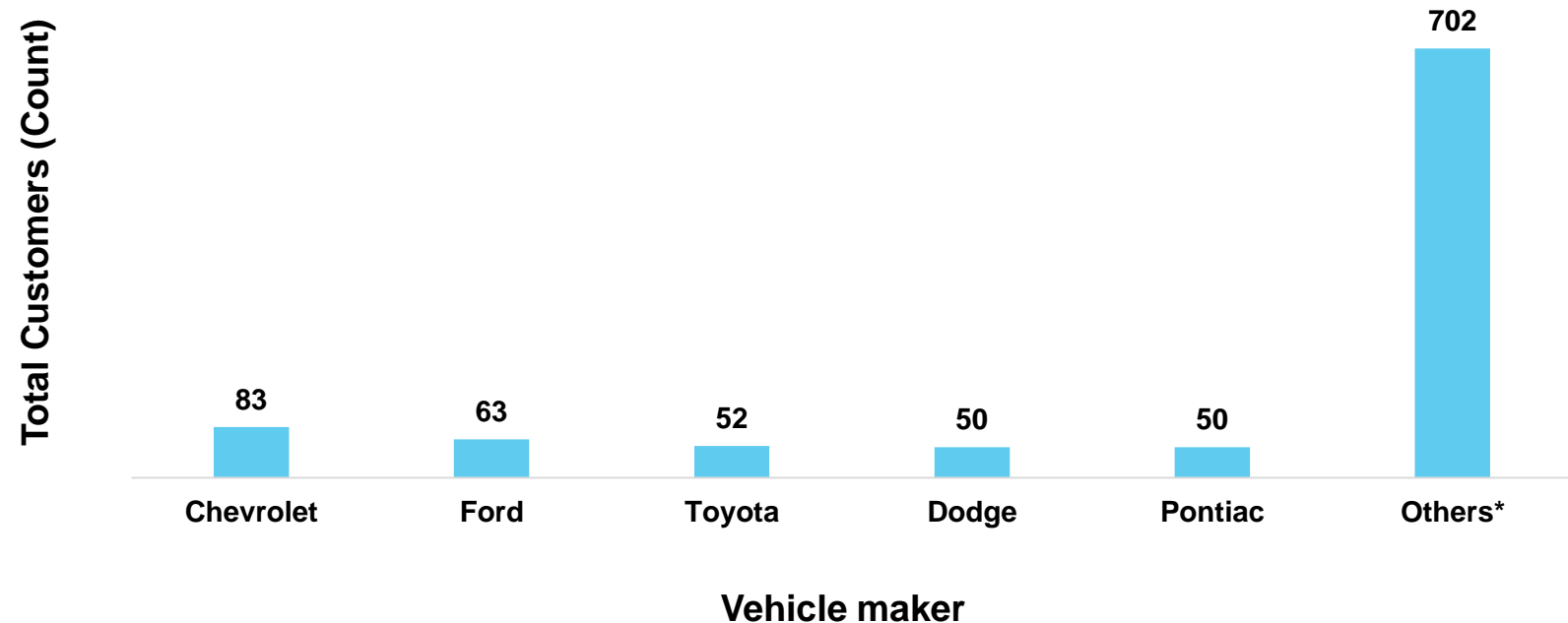
Top vehicle makers preferred by Customers



Observations:

- **Chevrolet** has the **highest number of total customers** with 83, making it the most popular vehicle maker among the given options
- **Ford follows** closely behind with 63 total customers, indicating a significant customer base as well
- **Toyota** comes in **third place** with 52 total customers, showing a good level of popularity among consumers
- **Dodge** and **Pontiac** both have 50 total customers, making them equally preferred among the given options
- The data suggests that **Chevrolet and Ford** have a **relatively larger market share** compared to other vehicle makers

Top 5 Vehicle maker (by no. of customers)



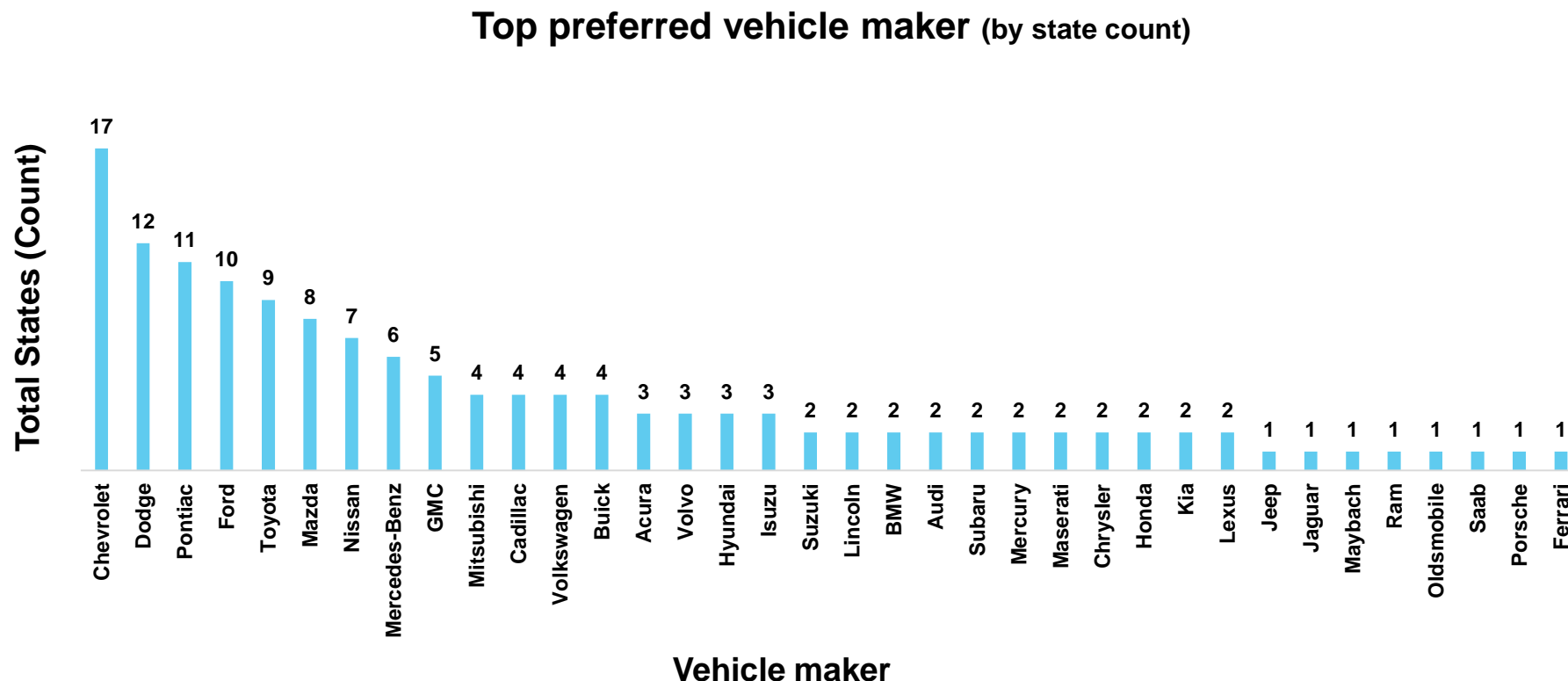
##Note : Others* includes states, Mercedes-Benz, Mazda, Mitsubishi, Buick, GMC, Volkswagen, Nissan, BMW, Volvo, Audi, Subaru, Suzuki, Honda, Cadillac, Isuzu, Lexus, Lincoln, Kia, Infiniti, Mercury, Hyundai, Chrysler, Jaguar, Oldsmobile, Saab, Acura, Jeep, Land Rover, Lamborghini, Plymouth, Porsche, Maserati, Bentley, Ferrari, Eagle, Lotus, Geo, Maybach, Scion, Morgan, Aston Martin, Rolls-Royce, Saturn, MINI, Austin, Citroën, MG, Daewoo, Ram



Most Preferred Vehicle maker by States

Observations:

- **Chevrolet** is the **most preferred vehicle maker** in **17 states**, indicating a strong presence and popularity in those regions
- **Dodge** follows closely behind with **12 states**, suggesting a significant market share in these states
- **Pontiac, Ford, and Toyota** also enjoy substantial popularity, being most preferred in **11, 10, and 9 states** respectively
- The **top five vehicle makers (Chevrolet, Dodge, Pontiac, Ford, and Toyota)** dominate the preferences in a **total of 59 states**
- Vehicle makers, such as **Jaguar, Maybach, Ram, Oldsmobile, Saab, Porsche, and Ferrari**, are preferred in **only one state**, indicating a relatively limited market presence



##Note : This data is derived from table which is added for reference after Appendix, slide no. 19 and 20

Revenue and Order Metrics

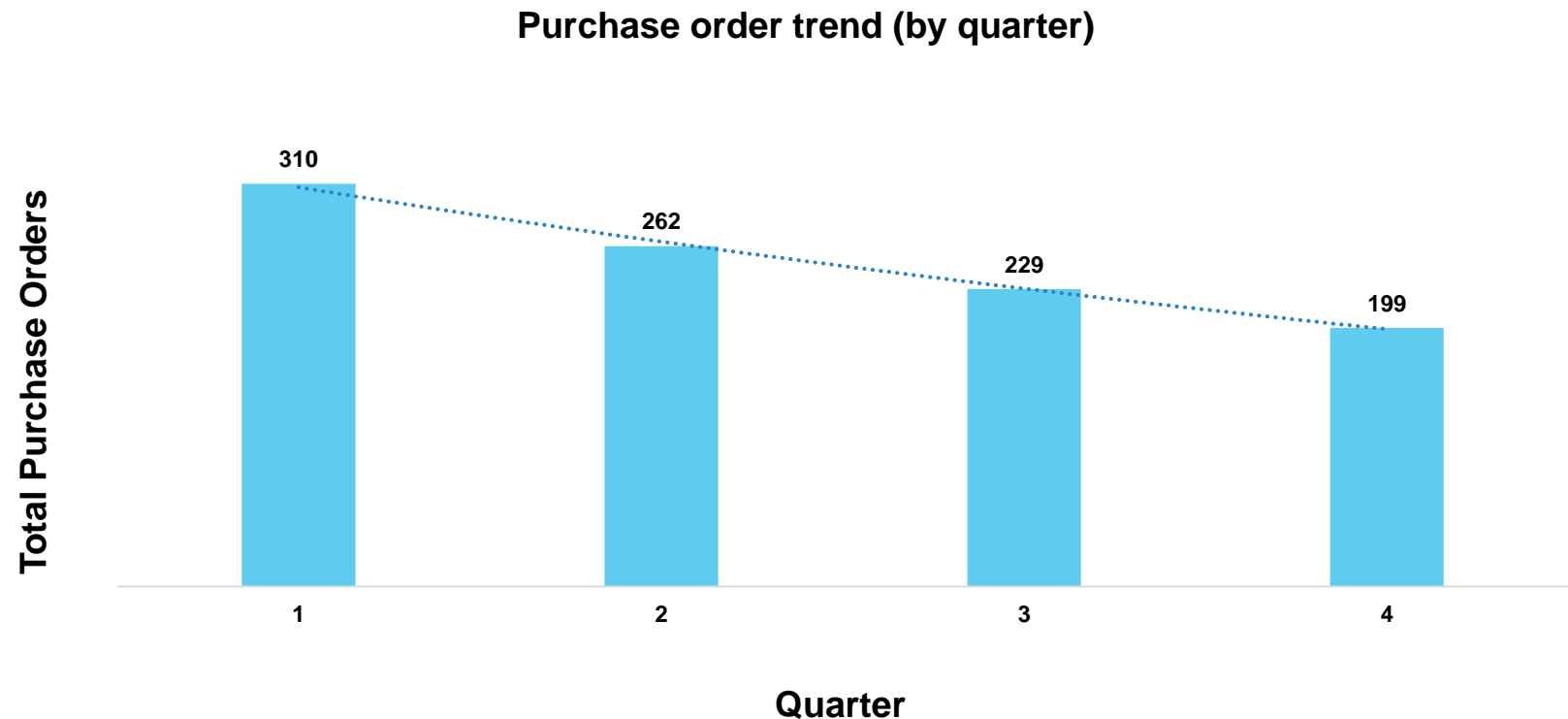


Trend of Purchase orders by Quarter



Observations:

- The number of orders shows a **decreasing trend over the quarters**, indicating a potential drop in customer demand or a seasonal pattern where certain quarters have historically lower purchase orders
- The **highest number of orders** was observed in **Quarter 1** with 310 orders, and the **lowest** was in **Quarter 4** with 199 orders
- There is a noticeable **decline** in **orders from Quarter 1 to Quarter 4**, suggesting a need for businesses to analyze and address factors affecting purchase orders in the latter part of the year

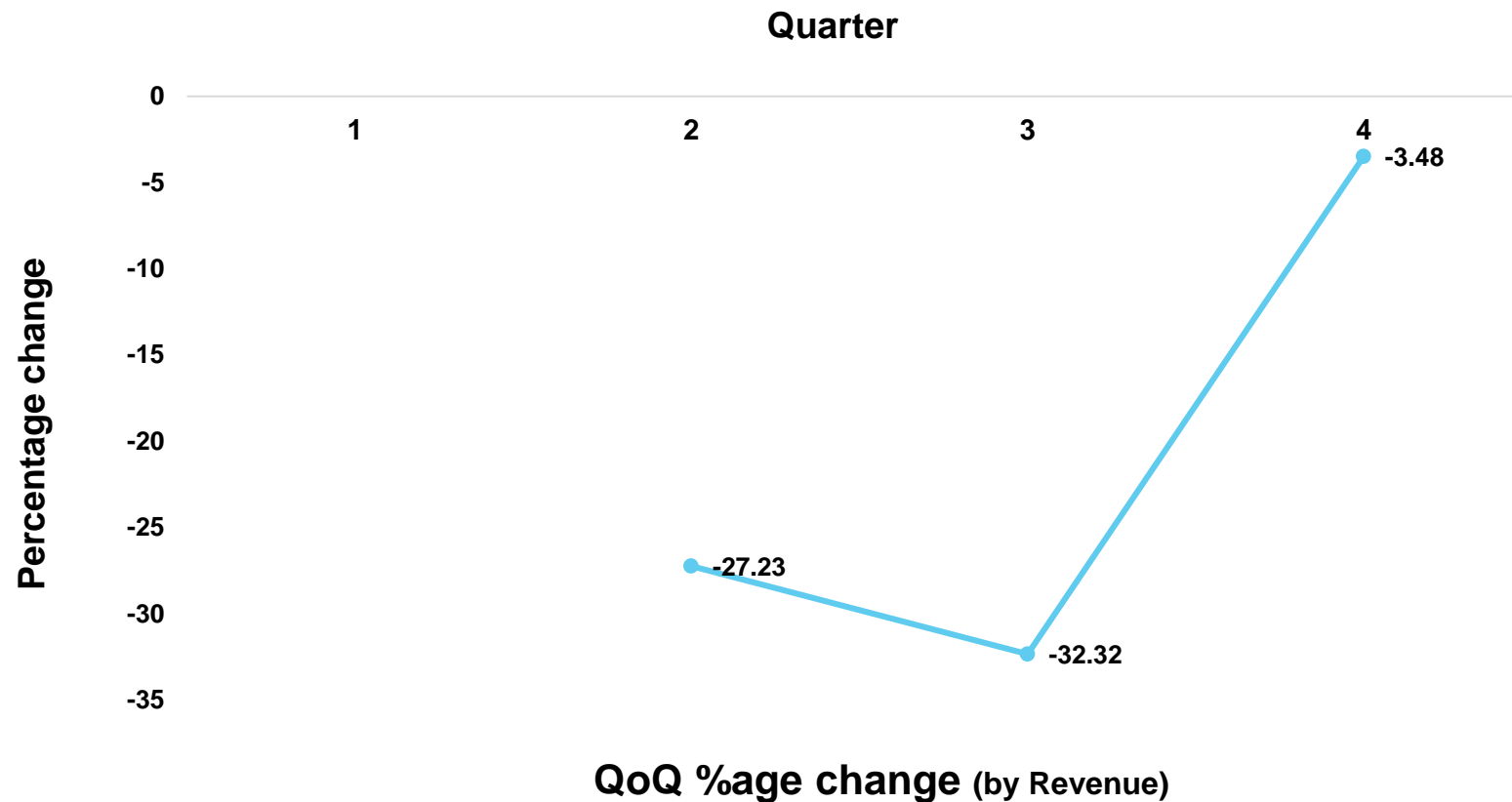


Quarter on Quarter % change in Revenue

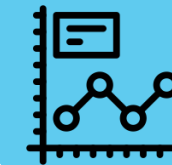


Observations:

- The revenue has been **decreasing over the quarters**. It started at 18,032,549.9 in Quarter 1 and has declined to 8,573,149.281 in Quarter 4
- The **quarterly percentage change** in revenue shows a **consistent negative trend**. The **highest decline** was observed between **Quarter 1 and Quarter 2**, with a decrease of 27.23%. The **decline continued** in subsequent quarters, with **Quarter 3** experiencing a 32.32% decrease **and Quarter 4** showing a 3.48% decrease
- Although there is an overall downward trend, there are **fluctuations in the percentage change between quarters**. For example, the decline in revenue between Quarter 2 and Quarter 3 was more substantial compared to the decline between Quarter 3 and Quarter 4

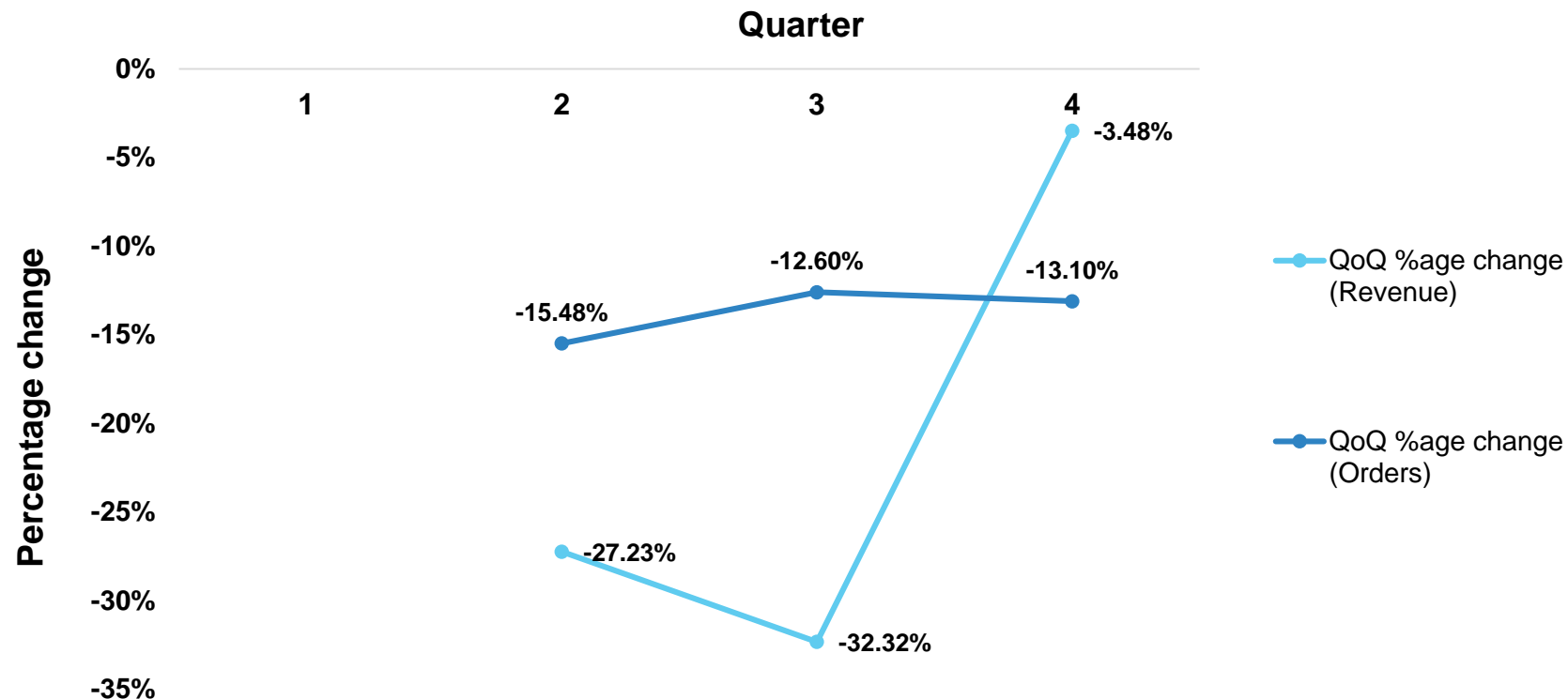


Trend of Revenue and Orders by Quarter

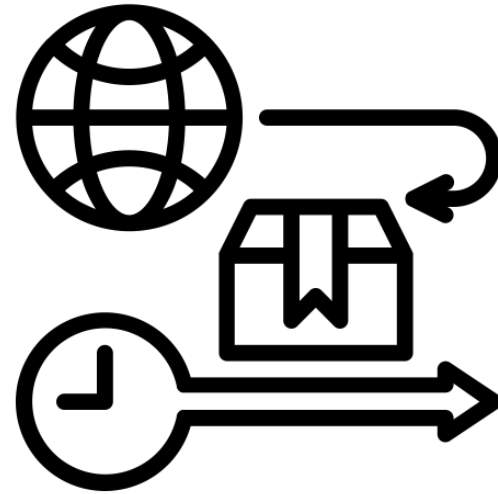


Observations:

- There is a consistent **quarter-on-quarter (QoQ) decline in revenue**, with percentages **ranging from -3.48% to -32.32%**. This trend suggests that the company's overall sales performance has been decreasing over the analyzed period
- While the **revenue consistently declined**, the number of orders showed more fluctuation, with **QoQ changes ranging from -15.48% to -12.60%**. The variations in order numbers may indicate changes in customer demand or shipping delivery time
- Despite the fluctuations in order numbers, there is a stronger **correlation between revenue and orders**. The decline in revenue is directly influenced by the decreasing number of orders, implying that **revenue is primarily driven by purchase orders volume**



Shipping Metrics

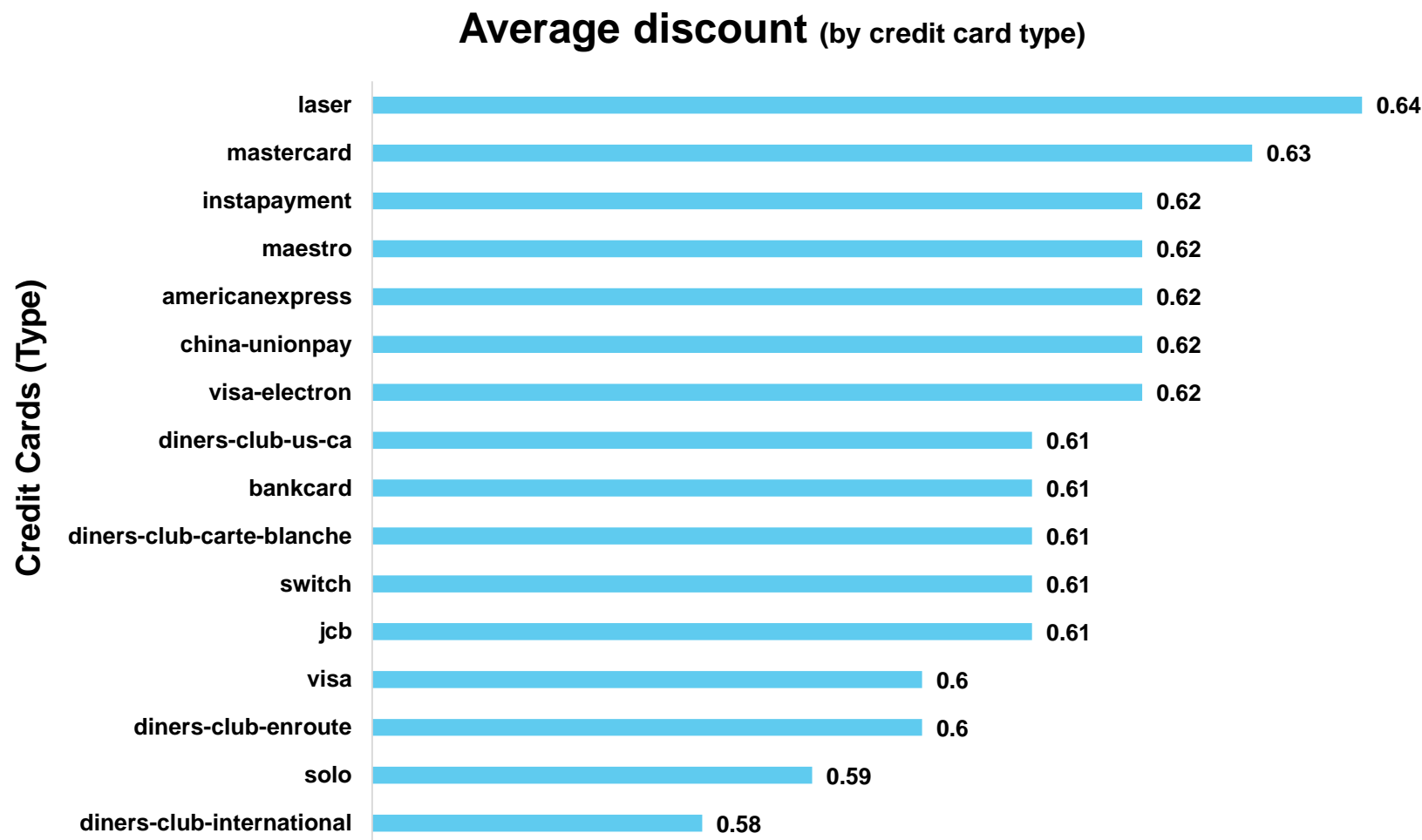


Average discount offered by Credit Card type



Observations:

- The **average discounts range** from **0.58 to 0.64**, indicating that there are differences in the discount rates across different credit card types
- The credit card type with the **lowest** average discount is "**diners-club-international**" at 0.58, while "**laser**" has the **highest** average discount at 0.64

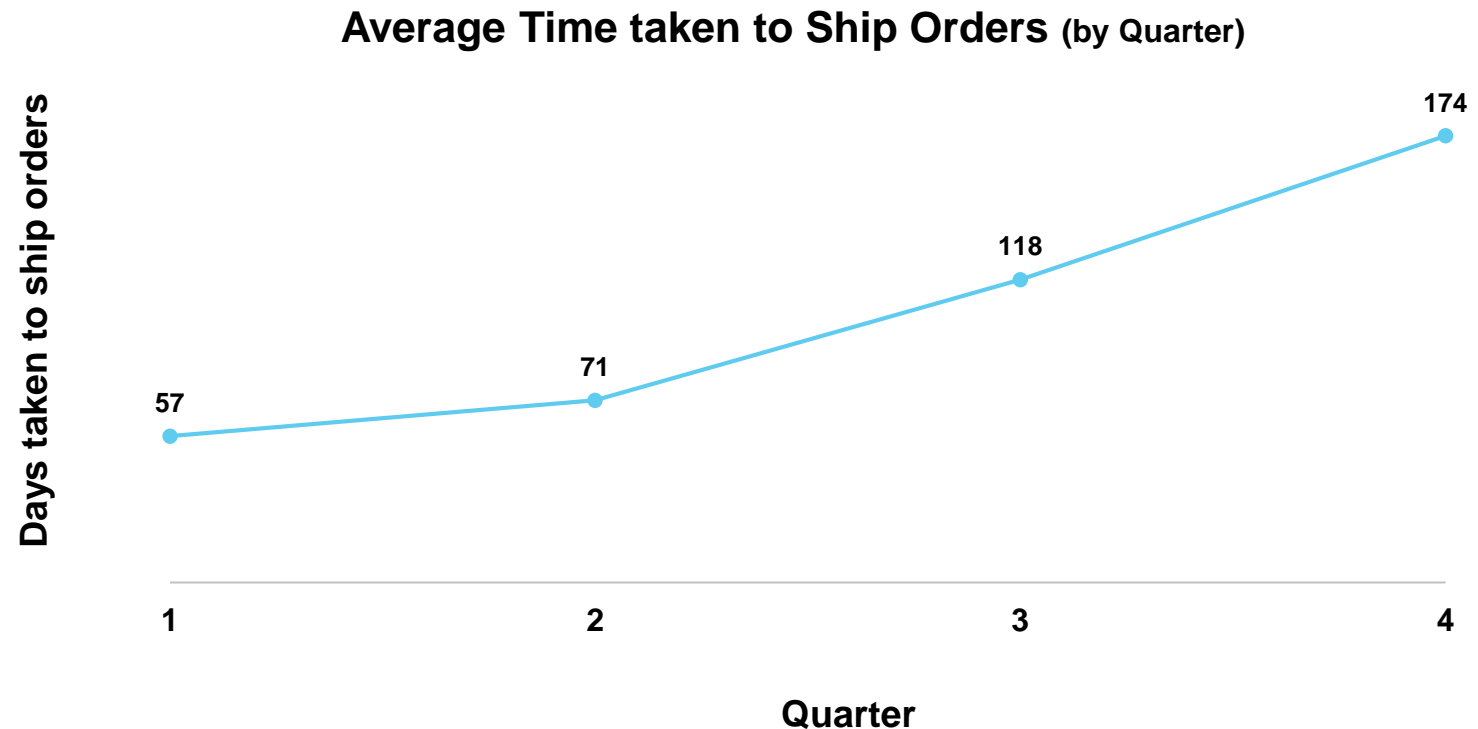


Time taken to ship purchase orders by Quarter



Observations:

- The average time to ship has increased over the quarters, with the **highest** average of **174 days in quarter 4** and the **lowest** average of **57 days in quarter 1**
- **Quarter 4** has the **longest average time** to ship, indicating a potential issue or bottleneck in the shipping process during that period
- There has been a significant **jump** in the **average time** to ship **between quarter 3 (118 days) and quarter 4 (174 days)**, suggesting a possible problem that arose in quarter 4
- The steepest **increase** in **average time** to ship occurred **between quarter 2 (71 days) and quarter 3 (118 days)**, indicating a sudden slowdown in the shipping process during that period
- The **lowest average time** to ship was observed in **quarter 1**, which suggests that the shipping process was more efficient during the beginning of the year



Insights and Suggestions



Insights

- **Texas** and **California** have the **highest number of customers**, followed by **Florida**, **New York**, and the **District of Columbia**
- **Chevrolet** and **Ford** are the top vehicle makers, followed by **Toyota**, **Pontiac**, and **Dodge**, making them the **top 5 vehicle makers**
- **Purchase orders** are **declining** from quarter to quarter, leading to a **decrease in revenue**
- The **average ratings** have been **declining each quarter**
- **Customers** have been expressing **dissatisfaction** over time
- The **average discount** given based on the **credit card** type **ranges** from **0.58%** to **0.64%**, with **Laser** getting the **highest average discount** at 0.64%
- The **average days to ship** orders are **increasing each quarter**, indicating that shipping is taking more time than in previous quarters

Recommendations

- Vehicle makers' should address the **issue of slow shipping to avoid customer dissatisfaction**. This could involve **improving delivery services** or **exploring alternative shipping methods**
- Temporarily **increasing discounts** and **optimizing the shipping process** may revert the decreasing customer satisfaction
- **Enhance ratings** by ensuring vehicles are in good condition and focus on **providing high-quality services**, such as **fast delivery**
- Need to **create more demand** for vehicle like **Mercedes-Benz**, **BMW**, **Toyota**, **Lexus**, **Jaguar**
- Conduct **online promotions** and **surveys** to identify **factors affecting sales** in specific regions
- Develop **effective strategies** with **finance companies** offering **credit cards** to attract **more customers**
- Availability of **preferred vehicle models locally** could potentially **expedite delivery services**

Appendix

Most Preferred Vehicle maker by States (Table 1/2)



State	Top vehicle maker	No. of customers
Texas	Chevrolet	9
Florida	Toyota	7
California	Ford, Dodge, Audi, Nissan, Chevrolet	6
Ohio	Chevrolet	6
Alabama	Dodge	5
Colorado	Chevrolet	5
Maryland	Ford	5
New York	Toyota, Pontiac	5
Virginia	Ford	5
Washington	Chevrolet	5
District of Columbia	Chevrolet	4
Indiana	Mazda	4
Missouri	Chevrolet	4
Arizona	Pontiac, Cadillac	3
Georgia	Toyota	3
Illinois	Ford, GMC, Chevrolet	3
Michigan	Ford	3
Minnesota	GMC	3
Nevada	Pontiac	3
North Carolina	Volvo	3
Pennsylvania	Toyota	3
Tennessee	Mazda	3
Alaska	Chevrolet	2
Connecticut	Chevrolet, Mercury, Maserati, Volvo	2
Delaware	Mitsubishi	2
Idaho	Dodge	2

Most Preferred Vehicle maker by States (Table 2/2)



State	Top vehicle maker	No. of customers
Louisiana	BMW, Nissan, Ford, Pontiac, Kia	2
Massachusetts	Dodge, Chevrolet	2
New Jersey	Mercedes-Benz, Hyundai	2
New Mexico	Dodge	2
Oklahoma	Toyota, Ferrari, Mazda	2
Oregon	Toyota	2
West Virginia	Mercedes-Benz	2
Arkansas	Suzuki, Chevrolet, Pontiac, Volkswagen, Mitsubishi, GMC	1
Hawaii	Ford, Toyota, Pontiac, Nissan, Cadillac, GMC	1
Iowa	Chrysler, Chevrolet, Hyundai, Isuzu, Dodge, Mazda, Porsche, Jeep, Ford, Pontiac, Subaru	1
Kansas	GMC, Lexus, Buick, Mercedes-Benz, Suzuki, Honda, Dodge, Volkswagen, Ford, Mazda, Maserati, Nissan, Saab	1
Kentucky	Acura, Mercury, Audi, Ram, Volvo, Pontiac, Nissan, Mercedes-Benz	1
Maine	Mercedes-Benz	1
Mississippi	Dodge, Toyota	1
Montana	Chevrolet, Mitsubishi, Dodge	1
Nebraska	Chevrolet, Mercedes-Benz, Volkswagen, Nissan, Pontiac, Toyota, Cadillac	1
New Hampshire	Chrysler, Lincoln, Lexus	1
North Dakota	Hyundai, Ford	1
South Carolina	Acura, Buick, BMW, Kia, Mazda, Mitsubishi, Dodge, Jaguar, Isuzu	1
Utah	Maybach, Volkswagen, Isuzu, Subaru, Lincoln, Chevrolet, Oldsmobile, Pontiac, Dodge, Buick	1
Vermont	Mazda	1
Wisconsin	Pontiac, Chevrolet, Acura, Mazda, Nissan, Cadillac, Dodge, Honda	1
Wyoming	Buick	1