

## Problem Statement:

Assuming you are a data analyst/ scientist at Target, you have been assigned the task of analyzing the given dataset to extract valuable insights and provide actionable recommendations.

What does 'good' look like?

1. Import the dataset and do usual exploratory analysis steps like checking the structure & characteristics of the dataset:

1.1.Data type of all columns in the "customers" table.

```
SELECT column_name, data_type
FROM `project1sqltarget.target.INFORMATION_SCHEMA.COLUMNS`
WHERE table_name = 'customers'
```

Row	column_name	data_type
1	customer_id	STRING
2	customer_unique_id	STRING
3	customer_zip_code_prefix	INT64
4	customer_city	STRING
5	customer_state	STRING

The table contains string and integer.

1.2. Get the time range between which the orders were placed

```
SELECT max(order_purchase_timestamp) as end_date,min(order_purchase_timestamp) as start_date
from `target.orders`
```

Row	end_date	start_date
1	2018-10-17 17:30:18 UTC	2016-09-04 21:15:19 UTC

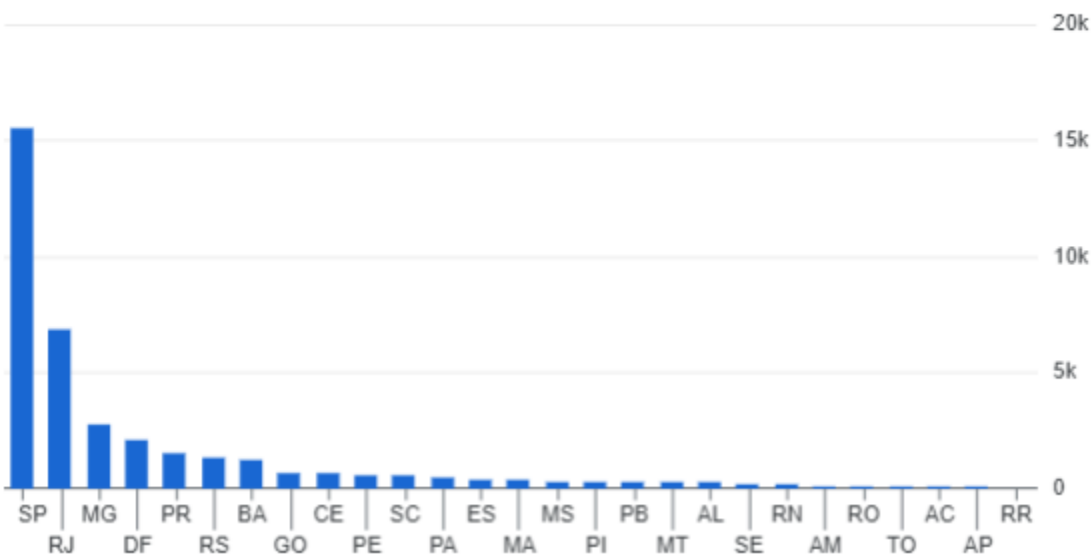
The order was placed between these two time range.

### 1.3 Count the Cities & States of customers who ordered during the given period

```
SELECT DISTINCT c.customer_city,c.customer_state,  
COUNT(o.customer_id) as order_count  
FROM target.orders as o  
JOIN target.customers c  
ON o.customer_id = c.customer_id  
GROUP BY 1, 2  
ORDER BY 3 DESC
```

Row	customer_city	customer_state	order_count
1	sao paulo	SP	15540
2	rio de janeiro	RJ	6882
3	belo horizonte	MG	2773
4	brasilia	DF	2131
5	curitiba	PR	1521
6	campinas	SP	1444
7	porto alegre	RS	1379
8	salvador	BA	1245
9	guarulhos	SP	1189
10	sao bernardo do campo	SP	938

order\_count by customer\_state



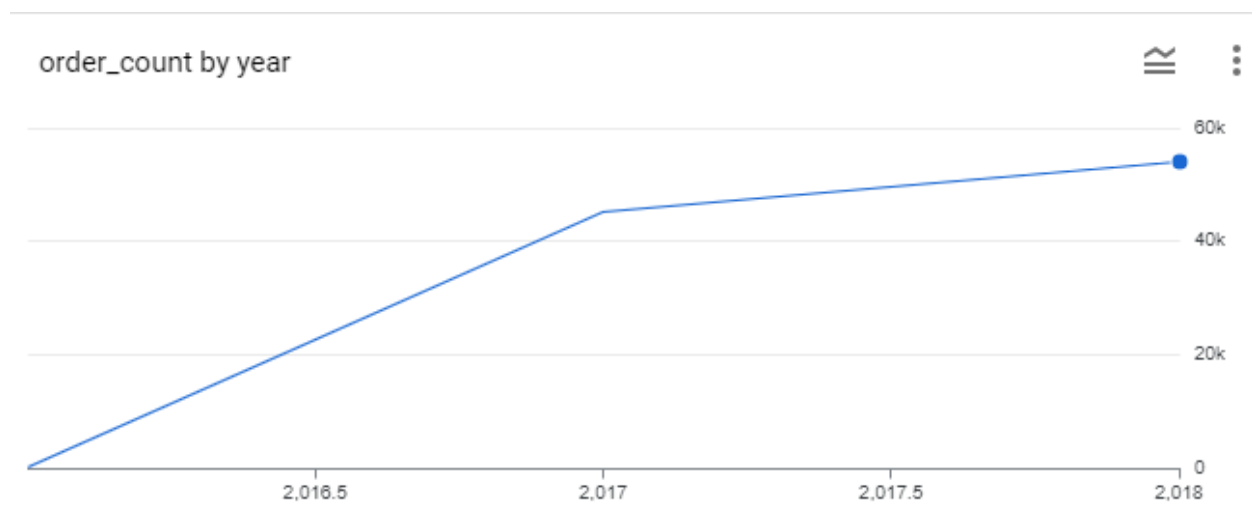
From the table it shows that the maximum orders were placed in SP followed by RJ. Than any other states. Hence the maximum promotional activities should be done in these two states. As the number of people might be more in these two states.

## 2. In-depth Exploration:

1.1 Is there a growing trend in the no. of orders placed over the past years?

```
SELECT
EXTRACT(YEAR FROM o.order_purchase_timestamp) AS year,
COUNT(DISTINCT o.order_id) AS order_count
FROM `target.orders` o
JOIN `target.customers` c
ON o.customer_id = c.customer_id
GROUP BY year
ORDER BY year
```

Row	year	order_count
1	2016	329
2	2017	45101
3	2018	54011

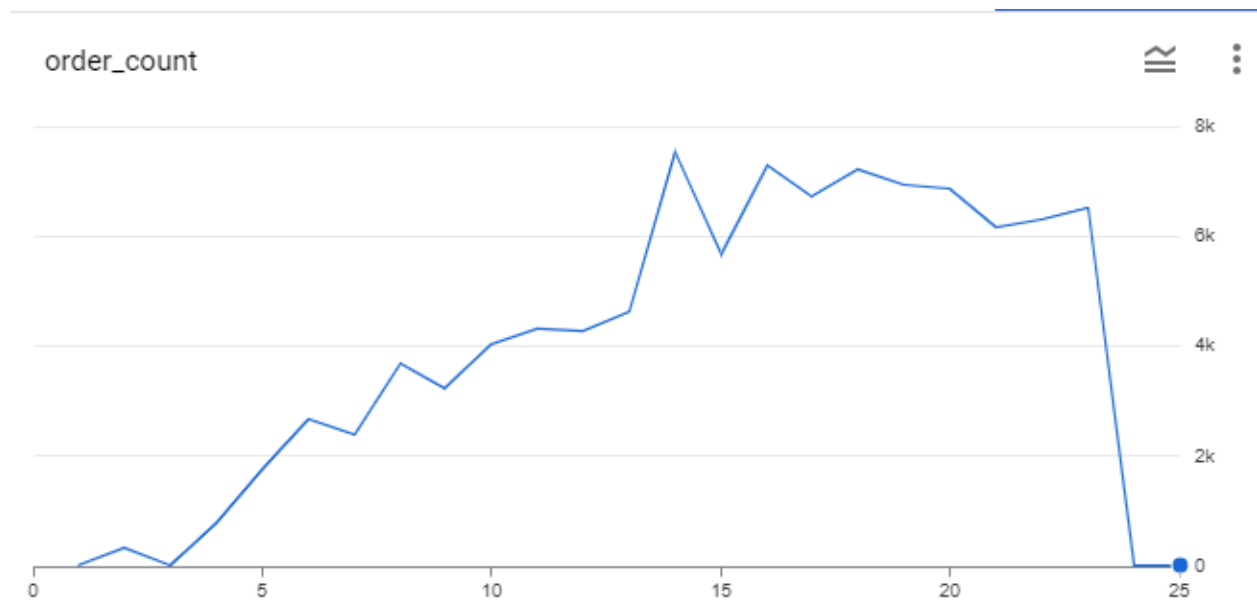


There is growing trend in the sales from 2016 to 2018. This shows that the number of people buying has increased eventually and reasons might be due to increased promotional activities and growth in the business.

There a growing trend in the no. of orders placed over the past months as well.

```
SELECT
EXTRACT(YEAR FROM o.order_purchase_timestamp) AS year,
EXTRACT(MONTH FROM o.order_purchase_timestamp) AS month,
COUNT(DISTINCT o.order_id) AS order_count
FROM `target.orders` o
JOIN `target.customers` c ON
o.customer_id = c.customer_id
GROUP BY
year,month
ORDER BY
year,month
```

Row	year ▼	month ▼	order_count ▼
1	2016	9	4
2	2016	10	324
3	2016	12	1
4	2017	1	800
5	2017	2	1780
6	2017	3	2682
7	2017	4	2404
8	2017	5	3700
9	2017	6	3245
10	2017	7	4026

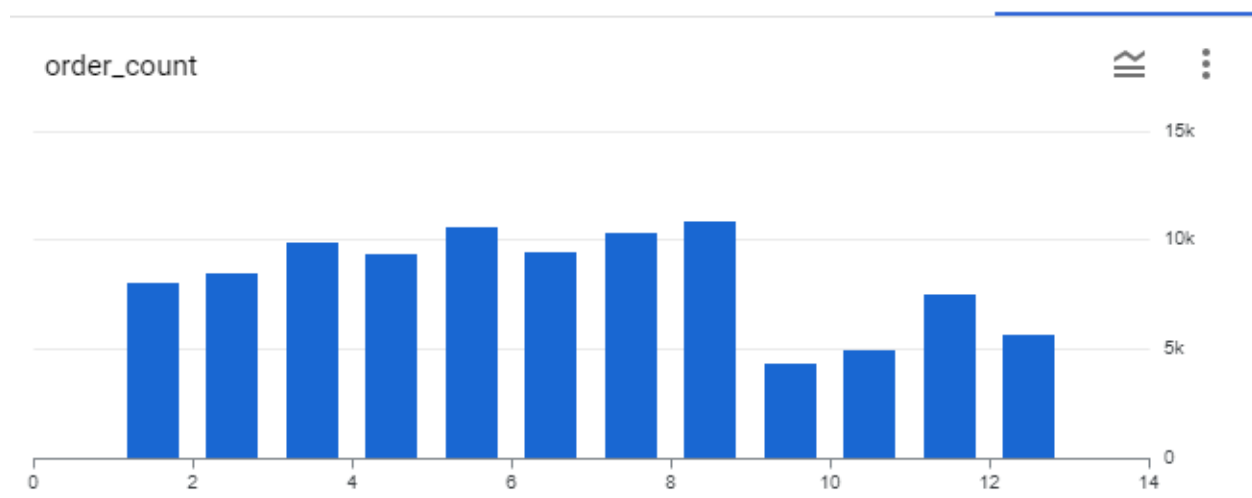


There is growing trend with respect to the month on month sales. And there can be seen a dip in sales during the month of October in the year 2018. Which can be due to many factors like demographic changes in the population, company customer satisfaction, technology, climate etc.

2.2 Can we see some kind of monthly seasonality in terms of the no. of orders being placed?

```
SELECT
  EXTRACT(MONTH FROM order_purchase_timestamp) AS month,
  COUNT(DISTINCT order_id) AS order_count
FROM
  `target.orders`
GROUP BY
  month
ORDER BY
  month
```

Row	month ▼	order_count ▼
1	1	8069
2	2	8508
3	3	9893
4	4	9343
5	5	10573
6	6	9412
7	7	10318
8	8	10843



The count of orders generally increases from March to August with fluctuations in between. Notably, there is an increase in orders during February and March. Additionally, the month of August shows a peak in order count.

2.3 During what time of the day, do the Brazilian customers mostly place their orders?  
(Dawn, Morning, Afternoon or Night)

```

SELECT
  CASE
    WHEN EXTRACT(HOUR FROM o.order_purchase_timestamp) BETWEEN 0 AND 5 THEN 'Dawn'
    WHEN EXTRACT(HOUR FROM o.order_purchase_timestamp) BETWEEN 6 AND 11 THEN 'Morning'
    WHEN EXTRACT(HOUR FROM o.order_purchase_timestamp) BETWEEN 12 AND 17 THEN 'Afternoon'
    WHEN EXTRACT(HOUR FROM o.order_purchase_timestamp) BETWEEN 18 AND 23 THEN 'Night'
  END AS hour,
  COUNT(o.order_id) AS order_count
FROM
  target.orders o
JOIN
  target.customers c
ON o.customer_id = c.customer_id
GROUP BY
  hour
ORDER BY
  order_count DESC

```

Row	hour ▼	order_count ▼
1	Afternoon	38361
2	Night	34100
3	Morning	22240
4	Dawn	4740

Customers tend to place most orders during the daytime, specifically in the afternoon and night. This indicates that customers prefer to shop online when they have leisure time or after completing their daily activities

In order to optimize the sale activity allocating customer service representatives and inventory, more effectively to meet customer demands and provide a seamless shopping experience during the peak hours maximizing their reach and potential sales

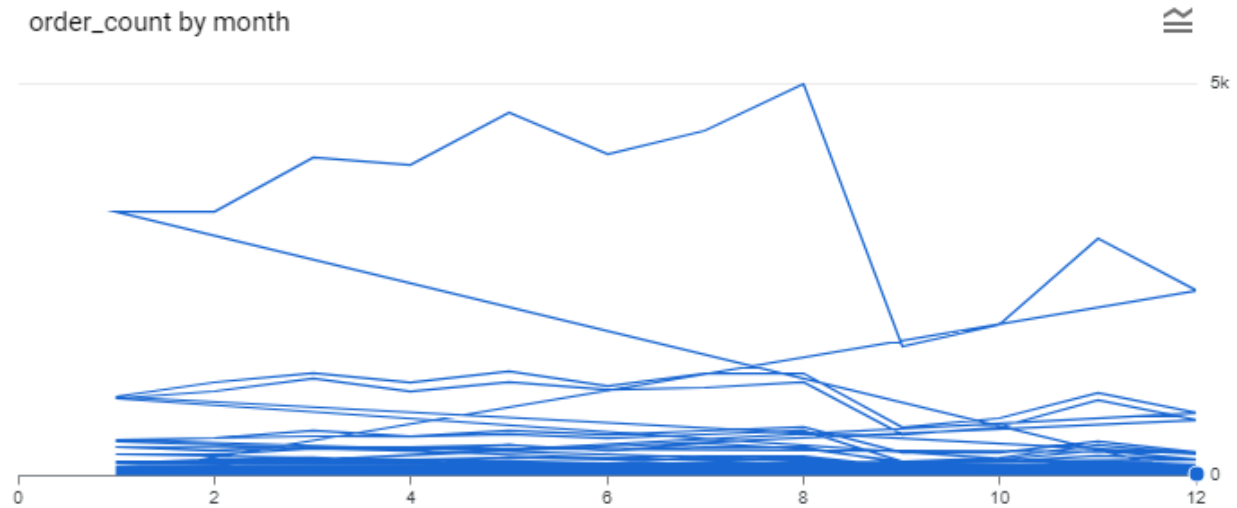
### 3. Evolution of E-commerce orders in the Brazil region:

3.1 Get the month on month no. of orders placed in each state.

```
SELECT c.customer_state,  
EXTRACT(month FROM o.order_purchase_timestamp) AS month,  
COUNT(o.order_purchase_timestamp) AS order_count  
FROM target.orders o  
JOIN target.customers c  
ON o.customer_id = c.customer_id  
GROUP BY c.customer_state, month  
ORDER BY c.customer_state, month
```

Row	customer_state ▼	month ▼	order_count ▼
1	AC	1	8
2	AC	2	6
3	AC	3	4
4	AC	4	9
5	AC	5	10
6	AC	6	7
7	AC	7	9
8	AC	8	7
9	AC	9	5
10	AC	10	6





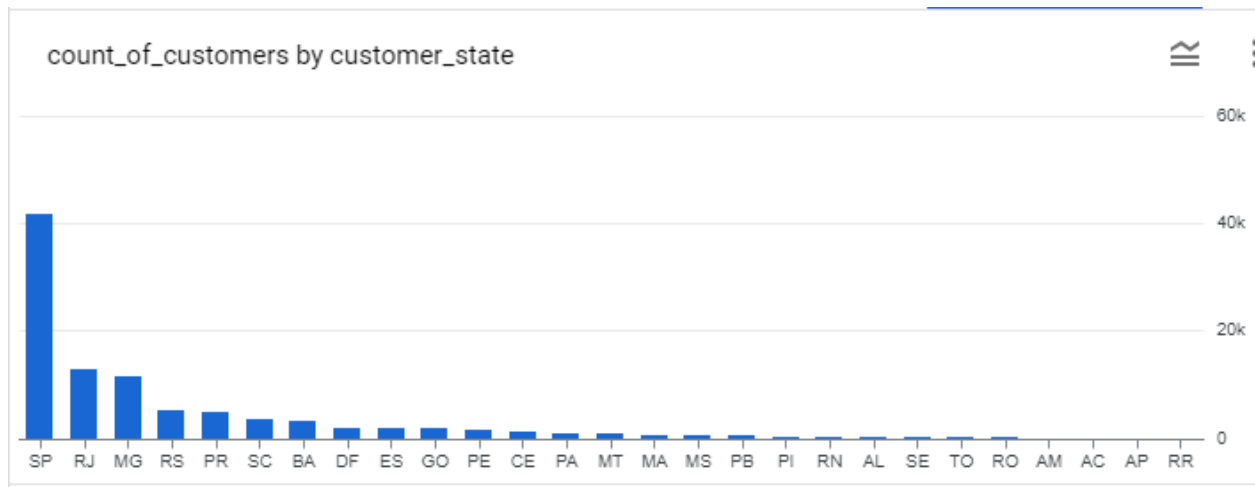
São Paulo (SP) consistently has the highest number of orders in any given month, followed by Rio de Janeiro (RJ) and Minas Gerais (MG). This helps in understanding the sale pattern month on month in each state. Hence Target can tailor their marketing strategies and promotional campaigns to specific month when the sale is less comparatively.

3.2 How are the customers distributed across all the states?

3.3

```
SELECT customer_state, count(customer_id) as count_of_customers
from `target.customers`
group by customer_state
order by count_of_customers desc
```

Row	customer_state ▼	count_of_customers
1	SP	41746
2	RJ	12852
3	MG	11635
4	RS	5466
5	PR	5045
6	SC	3637
7	BA	3380
8	DF	2140
9	ES	2033
10	GO	2020



The data reveals that the state of São Paulo (SP) has the highest number of customers. Hence the company can effectively target specific regions, allocate resources strategically, and deliver personalized experiences that cater to the unique preferences and demands of customers in different states

#### 4. Impact on Economy: Analyze the money movement by e-commerce by looking at order prices, freight and others.

- 4.1 Get the % increase in the cost of orders from year 2017 to 2018 (include months between Jan to Aug only).  
You can use the "payment\_value" column in the payments table to get the cost of orders.

```

SELECT
EXTRACT(MONTH FROM o.order_purchase_timestamp) AS month,
(
    (
        SUM(CASE WHEN EXTRACT(YEAR FROM o.order_purchase_timestamp) = 2018 AND
EXTRACT(MONTH FROM o.order_purchase_timestamp) BETWEEN 1 AND 8 THEN
p.payment_value END)
        -
        SUM(CASE WHEN EXTRACT(YEAR FROM o.order_purchase_timestamp) = 2017 AND
EXTRACT(MONTH FROM o.order_purchase_timestamp) BETWEEN 1 AND 8 THEN
p.payment_value END)
    )
    /
    SUM(CASE WHEN EXTRACT(YEAR FROM o.order_purchase_timestamp) = 2017 AND
EXTRACT(MONTH FROM o.order_purchase_timestamp) BETWEEN 1 AND 8 THEN
p.payment_value END)
)*100 AS percent_increase
FROM
`target.orders` o
JOIN
`target.payments` p ON o.order_id = p.order_id
WHERE
EXTRACT(YEAR FROM o.order_purchase_timestamp) IN (2017, 2018) AND
EXTRACT(MONTH FROM o.order_purchase_timestamp) BETWEEN 1 AND 8
GROUP BY 1
ORDER BY 1

```

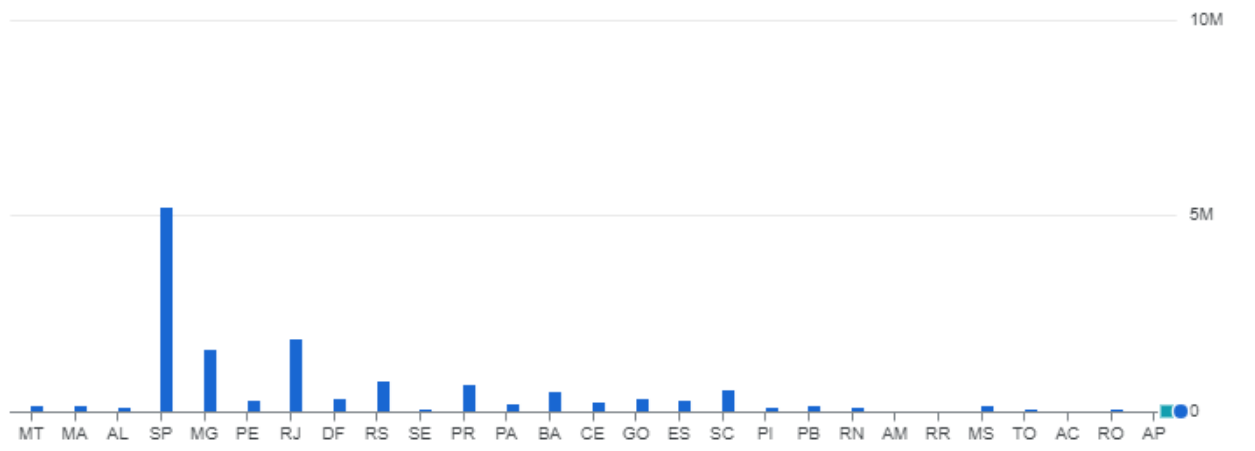
Row	month	percent_increase
1	1	705.1266954171...
2	2	239.9918145445...
3	3	157.7786066709...
4	4	177.8407701149...
5	5	94.62734375677...
6	6	100.2596912456...
7	7	80.04245463390...
8	8	51.60600520477...

Since during the month of October to December there is decline in the sales , it can be noted that during the month of January shows the highest percentage increase, followed by February and April.

## 4.2 Calculate the Total & Average value of order price for each state.

```
SELECT c.customer_state,  
       round(avg(i.price),2) AS average,  
       round(sum(i.price),2) AS Total  
FROM `target.orders` o  
JOIN `target.order_items` i ON o.order_id = i.order_id  
JOIN `target.customers` c ON o.customer_id = c.customer_id  
GROUP BY c.customer_state
```

Row	customer_state	average	Total
1	MT	148.3	156453.53
2	MA	145.2	119648.22
3	AL	180.89	80314.81
4	SP	109.65	5202955.05
5	MG	120.75	1585308.03
6	PE	145.51	262788.03
7	RJ	125.12	1824092.67
8	DF	125.77	302603.94



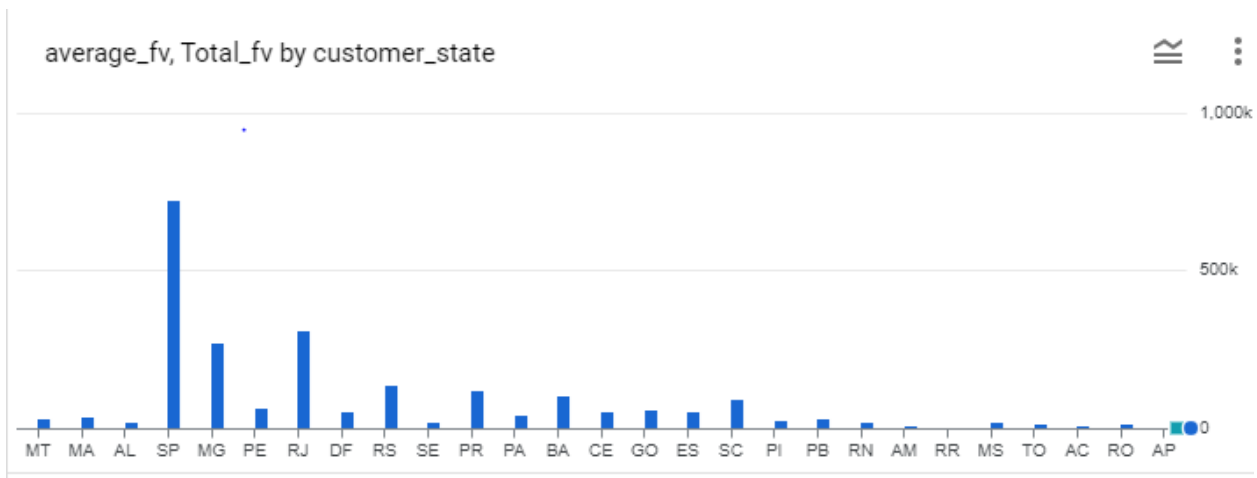
São Paulo (SP) has the highest total price value but has the lowest average price value.

Paraíba (PB) has the highest average price value

### 4.3 Calculate the Total & Average value of order freight for each state

```
SELECT c.customer_state,  
round(avg(i.freight_value),2) AS average_fv,  
round(sum(i.freight_value),2) AS Total_fv  
FROM `target.orders` o  
JOIN `target.order_items` i ON o.order_id = i.order_id  
JOIN `target.customers` c ON o.customer_id = c.customer_id  
GROUP BY c.customer_state
```

Row	customer_state	average_fv	Total_fv
1	MT	28.17	29715.43
2	MA	38.26	31523.77
3	AL	35.84	15914.59
4	SP	15.15	718723.07
5	MG	20.63	270853.46
6	PE	32.92	59449.66
7	RJ	20.96	305589.31
8	DF	21.04	50625.5
9	RS	21.74	135522.74
10	SE	36.65	14111.47



São Paulo (SP) has the highest total price value and total freight value, it surprisingly has the lowest average price value and average freight value among all states. Paraíba (PB) has the highest average price value and average freight value

## 5. Analysis based on sales, freight and delivery time.

5.1 Find the no. of days taken to deliver each order from the order's purchase date as delivery time.

Also, calculate the difference (in days) between the estimated & actual delivery date of an order.

Do this in a single query.

You can calculate the delivery time and the difference between the estimated & actual delivery date using the given formula:

- **time\_to\_deliver** = order\_delivered\_customer\_date - order\_purchase\_timestamp
- **diff\_estimated\_delivery** = order\_estimated\_delivery\_date - order\_delivered\_customer\_date

```
SELECT
    order_id,
    DATE_DIFF(order_delivered_customer_date, order_purchase_timestamp, DAY)
    AS delivered_in_days,
    DATE_DIFF(order_estimated_delivery_date, order_purchase_timestamp, DAY)
    AS estimated_delivery_in_days,
    DATE_DIFF(order_estimated_delivery_date, order_delivered_customer_date, DAY)
    AS estimated_minus_actual_delivery_days
FROM
    `target.orders`
WHERE
    DATE_DIFF(order_delivered_customer_date, order_purchase_timestamp, DAY) IS NOT NULL
ORDER BY
    delivered_in_days
```

Row	order_id	delivered_in_days	estimated_delivery_i	estimated_minus_ac
1	e65f1eeee1f52024ad1dcd034...	0	10	9
2	bb5a519e352b45b714192a02f...	0	26	25
3	434cecee7d1a65fc65358a632...	0	20	19
4	d3ca7b82c922817b06e5ca211...	0	12	11
5	1d893dd7ca5f77ebf5f59f0d20...	0	10	10
6	d5fbeedc85190ba88580d6f82...	0	8	7
7	79e324907160caea526fd8b94...	0	9	8
8	38c1e3d4ed6a13cd0cf612d4c...	0	17	16
9	8339b608be0d84fca9d8da68b...	0	28	27
10	f349cdb62f69c3fae5c4d7d3f3...	0	13	12

This analysis helps in finding the delivery time and increasing the customer satisfaction wherever necessary by incorporating the necessary changes in the logistic system and increase the efficiency of opration.

## 5.2 Find out the top 5 states with the highest & lowest average freight value

Highest average freight value

```

SELECT
  c.customer_state,
  ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
  AS time_to_delivery,
  ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
2)
  AS diff_estimated_delivery
FROM
  `target.orders` o
JOIN
  `target.order_items` i ON o.order_id = i.order_id
JOIN
  `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
  c.customer_state
ORDER BY
  mean_freight_value desc
limit 5

```

Row	customer_state	mean_freight_value	time_to_delivery	diff_estimated_delivery
1	RR	42.98	27.83	17.43
2	PB	42.72	20.12	12.15
3	RO	41.07	19.28	19.08
4	AC	40.07	20.33	20.01
5	PI	39.15	18.93	10.68

## Lowest freight value

```

SELECT
  c.customer_state,
  ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
  AS time_to_delivery,
  ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
  2)
  AS diff_estimated_delivery
FROM
  `target.orders` o
JOIN
  `target.order_items` i ON o.order_id = i.order_id
JOIN
  `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
  c.customer_state
ORDER BY
  mean_freight_value
  limit 5

```

Row	customer_state	mean_freight_value	time_to_delivery	diff_estimated_delivery
1	SP	15.15	8.26	10.27
2	PR	20.53	11.48	12.53
3	MG	20.63	11.52	12.4
4	RJ	20.96	14.69	11.14
5	DF	21.04	12.5	11.27

From the above analysis, it shows that the freight value of SP is least and hence the shows the efficiency of operation in the state is easy compared to high freight value places. Hence this might also be one of the reasons of less sale in RR, PB,RO states. Company should work toward decreasing the freight value.



### 5.3 Find out the top 5 states with the highest & lowest average delivery time.

#### Highest Average delivery time

```
SELECT
  c.customer_state,
  ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
  AS avg_time_to_delivery,
  ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
  2)
  AS diff_estimated_delivery
FROM
  `target.orders` o
JOIN
  `target.order_items` i ON o.order_id = i.order_id
JOIN
  `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
  c.customer_state
ORDER BY
  avg_time_to_delivery desc
limit 5
```

Row	customer_state	mean_freight_value	avg_time_to_delivery	diff_estimated_delivery
1	RR	42.98	27.83	17.43
2	AP	34.01	27.75	17.44
3	AM	33.21	25.96	18.98
4	AL	35.84	23.99	7.98
5	PA	35.83	23.3	13.37

## Lowest average delivery time

```
SELECT
  c.customer_state,
  ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
  AS avg_time_to_delivery,
  ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
2)
  AS diff_estimated_delivery
FROM
  `target.orders` o
JOIN
  `target.order_items` i ON o.order_id = i.order_id
JOIN
  `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
  c.customer_state
ORDER BY
  avg_time_to_delivery
limit 5
```

Row	customer_state	mean_freight_value	avg_time_to_delivery	diff_estimated_delivery
1	SP	15.15	8.26	10.27
2	PR	20.53	11.48	12.53
3	MG	20.63	11.52	12.4
4	DF	21.04	12.5	11.27
5	SC	21.47	14.52	10.67

The analysis shows that SP has least average delivery time , while RR has least. It shows the inefficiency in the delivery system and in order to increase the sales need to decrease the delivery time.

The analysis reveals a weak positive correlation between mean freight value and time to delivery. São Paulo (SP) has the lowest mean freight value, while Roraima (RR) has the highest mean freight value. Understanding the sales, freight, and delivery time dynamics is crucial for businesses to optimize their operations and improve customer satisfaction. Roraima (RR) has the highest average time to delivery while São Paulo (SP) has the lowest average time to delivery.

5.4 Find out the top 5 states where the order delivery is really fast as compared to the estimated date of delivery.

You can use the difference between the averages of actual & estimated delivery date to figure out how fast the delivery was for each state

Highest average difference delivery time between estimated and calculated

```
SELECT
  c.customer_state,
  ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
  AS avg_time_to_delivery,
  ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
2)
  AS diff_estimated_delivery
FROM
  `target.orders` o
JOIN
  `target.order_items` i ON o.order_id = i.order_id
JOIN
  `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
  c.customer_state
ORDER BY
  diff_estimated_delivery desc
limit 5
```

Row	customer_state	mean_freight_value	avg_time_to_delivery	diff_estimated_delivery
1	AC	40.07	20.33	20.01
2	RO	41.07	19.28	19.08
3	AM	33.21	25.96	18.98
4	AP	34.01	27.75	17.44
5	RR	42.98	27.83	17.43

Lowest average difference delivery time between estimated and calculated

```
SELECT
    c.customer_state,
    ROUND(AVG(i.freight_value), 2) AS mean_freight_value,
    ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_purchase_timestamp, DAY)), 2)
    AS avg_time_to_delivery,
    ROUND(AVG(DATE_DIFF(o.order_estimated_delivery_date, o.order_delivered_customer_date, DAY)),
2)
    AS diff_estimated_delivery
FROM
    `target.orders` o
JOIN
    `target.order_items` i ON o.order_id = i.order_id
JOIN
    `target.customers` c ON o.customer_id = c.customer_id
GROUP BY
    c.customer_state
ORDER BY
    diff_estimated_delivery asc
limit 5
```

Row	customer_state	mean_freight_value	avg_time_to_delivery	diff_estimated_delivery
1	AL	35.84	23.99	7.98
2	MA	38.26	21.2	9.11
3	SE	36.65	20.98	9.17
4	ES	22.06	15.19	9.77
5	BA	26.36	18.77	10.12

## 6. Analysis based on the payments:

6.1 Find the month on month no. of orders placed using different payment types.

```
SELECT p.payment_type,
EXTRACT(MONTH FROM o.order_purchase_timestamp) AS month,
COUNT(DISTINCT o.order_id) AS order_count
FROM
    `target.orders` o
JOIN
    `target.payments` p
ON
    o.order_id = p.order_id
GROUP BY
    1, 2
ORDER BY
    1, 2
```

1	UPI	1	1715
2	UPI	2	1723
3	UPI	3	1942
4	UPI	4	1783
5	UPI	5	2035
6	UPI	6	1807
7	UPI	7	2074
8	UPI	8	2077
9	UPI	9	903
10	UPI	10	1056

The analysis shows an overall uptrend from January to August and another uptrend from September to November. Credit card transactions are the most popular payment method, followed by UPI. Debit card transactions are the least preferred option. Notably, credit card transactions are rapidly increasing compared to other payment methods, possibly due to benefits like “buy now, pay later” options or cashback received using credit cards

6.2 Find the no. of orders placed on the basis of the payment installments that have been paid.

```

SELECT
    p.payment_installments,
    COUNT(o.order_id) AS order_count
FROM
    `target.orders` o
JOIN
    `target.payments` p
ON
    o.order_id = p.order_id
WHERE
    o.order_status != 'canceled'
GROUP BY
    1
ORDER BY
    2 DESC

```

Row	payment_installment	order_count
1	1	52184
2	2	12353
3	3	10392
4	4	7056
5	10	5292
6	5	5209
7	8	4239
8	6	3898

The analysis reveals that the majority of orders (maximum count) have only one payment installment. The highest number of installments is 24, which is associated with 18 orders.

Understanding payment types and installment preferences is essential for businesses to optimize their payment processes and cater to customer preferences. By leveraging SQL queries and analyzing payment trends, companies can make informed decisions to improve payment options, streamline processes, and enhance the overall customer experience.

In conclusion, the analysis provides valuable insights into payment types and installment preferences. It highlights the popularity of credit card transactions, the increasing trend of credit card usage, and the prevalence of single-payment installment orders. These insights can help businesses align their payment strategies and improve customer satisfaction.

# Actionable Insights and Recommendations Based on the Analysis

## Actionable Insights

1. The data reveals that the state of SP has significantly more orders than the next five states combined. This indicates an opportunity for improvement in the other states. Focusing on these states can help increase the number of orders and expand the customer base.
2. Seasonal variations in sales are observed, with increased sales during January, February. Businesses should plan their marketing and sales strategies accordingly to capitalize on these peak periods and enhance customer satisfaction, resulting in overall sales growth.
3. Improving delivery times in areas with longer delivery durations can have a positive impact on customer satisfaction and encourage repeat purchases. Streamlining logistics and implementing efficient shipping processes are key to achieving this.
4. States like SP and RJ already have high order counts. To further boost sales and foster brand loyalty, it is recommended to focus on customer retention strategies, such as personalized marketing campaigns, loyalty programs, and exceptional customer service experiences.
5. Analyzing customer demographics can provide valuable insights for tailoring products and marketing strategies to specific target audiences. This customization can lead to increased sales and customer satisfaction.
6. The data indicates a decline in orders during September and October. Offering discounts or promotions during off-peak seasons can

incentivize customers to make purchases during these periods, thus boosting sales.

7. While the data does not include information on economic conditions, analyzing their impact on sales can help identify areas for improvement and investment, ensuring resilience during economic fluctuations.

## Recommendations

1. Improve logistics and shipping processes to reduce delivery times and enhance customer satisfaction. This includes optimizing warehouse operations, refining shipping routes, and partnering with reliable courier services.
2. Implement customer retention strategies to encourage repeat purchases and foster loyalty. This can be achieved through loyalty programs, referral rewards, and personalized offers.
3. Evaluate pricing and freight fees to ensure competitiveness in the market while maximizing revenue and profitability. Consider increasing prices or adjusting freight fees as appropriate.
4. Invest in technology and infrastructure to enhance the e-commerce experience. This includes implementing chatbots for customer support, improving website performance, and offering personalized product recommendations based on customer behavior.
5. Collaborate with sellers to expand product offerings and improve product quality, catering to diverse customer needs and preferences.



6. Leverage social media platforms and influencers to promote products and increase brand awareness, as they have a strong influence on purchasing decisions in Brazil.
7. Enhance the customer service experience by offering chat support services and ensuring prompt and effective responses to customer inquiries.
8. Monitor competitor activity and adjust the business strategy accordingly, such as matching or offering better pricing, expanding product offerings, or improving customer service to stay competitive in the market.

By implementing these actionable insights and recommendations, businesses can optimize their operations, enhance customer satisfaction, and drive overall sales growth in the Brazilian e-commerce market.

## Conclusion

In conclusion, the analysis of e-commerce data in the Brazilian market provides valuable insights into customer buying patterns, sales trends, payment preferences, and delivery experiences. By understanding these patterns and trends, businesses can make informed decisions and implement strategies to optimize their operations and drive growth. Here are the key takeaways from the analysis:

## Key Takeaways

- The state of SP dominates the e-commerce market in Brazil, indicating the need to focus on other states for potential growth opportunities.

- Analyzing customer demographics can help tailor products and marketing strategies to specific target audiences, leading to increased sales.
- Offering discounts during off-peak seasons can incentivize customers and boost sales during slower periods.