TARGET BUSINESS CASE STUDY

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 CHECK DATA TYPES OF ALL COLUMNS IN THE "CUSTOMERS" TABLE:

SELECT column_name, data_type
FROM `target_study.INFORMATION_SCHEMA.COLUMNS`
WHERE table_name = 'customers';

INSIGHTS: THE DATASET HAS INFORMATION ABOUT CUSTOMERS, LIKE THEIR ZIP CODE, STATE, AND PURCHASE HISTORY. THESE COLUMNS LIKELY STORE DATA RELATED TO CUSTOMER PROFILES AND LOCATIONS.

RECOMMENDATIONS: WE CAN USE THIS DATA TO LEARN MORE ABOUT CUSTOMERS AND THEIR PURCHASING BEHAVIOR. THIS WILL HELP SEND THEM TARGETED MARKETING MESSAGES AND IMPROVE THEIR OVERALL EXPERIENCE.

1.2 GET THE TIME RANGE BETWEEN WHICH THE ORDERS WERE PLACED

SELECT MIN(order_purchase_timestamp) AS start_date, MAX(order_purchase_timestamp) AS end_date
FROM `target_study.orders`

INSIGHTS: WE HAVE DATA ON WHAT OUR CUSTOMERS BOUGHT FROM SEPTEMBER 2016 TO OCTOBER 2018. **RECOMMENDATIONS**: WE CAN USE THIS DATA TO TARGET MARKETING MESSAGES MORE EFFECTIVELY AND USE THIS DATA TO LEARN MORE ABOUT THE CUSTOMERS. WHAT AND WHEN DO THEY LIKE TO BUY?

1.3 COUNT THE CITIES & STATES OF CUSTOMERS WHO ORDERED DURING THE GIVEN PERIOD:

```
SELECT
c.customer_city,
c.customer_state,
MIN(o.order_purchase_timestamp) AS start_date,
MAX(o.order_purchase_timestamp) AS end_date,
COUNT(o.customer_id) AS order_count
FROM `target_study.customers` as c
INNER JOIN `target_study.orders` as o on c.customer_id = o.customer_id
WHERE o.order_purchase_timestamp BETWEEN (
SELECT MIN(order_purchase_timestamp) FROM `target_study.orders`
) AND (
SELECT MAX(order_purchase_timestamp) FROM `target_study.orders`
)
GROUP BY c.customer_city, c.customer_state

ORDER BY c.customer_state, c.customer_city;
```

INSIGHTS: THE DATASET PROVIDES INFORMATION WHERE CUSTOMERS LIVE AND HOW OFTEN THEY ORDER. SOME PLACES, LIKE RIO BRANCO AND ARAPIRACA, HAVE A LOT OF ORDERS.

RECOMMENDATIONS: LET'S TARGET MARKETING AND SERVICE EFFORTS ON THE PLACES WHERE WE HAVE A LOT OF ORDERS. THIS WILL HELP US SELL MORE AND MAKE OUR CUSTOMERS HAPPIER. LET'S ALSO TAKE A LOOK AT THE PLACES WHERE WE DON'T HAVE AS MANY ORDERS TO SEE IF THERE ARE WAYS TO GROW OUR BUSINESS THERE.

2. In-depth Exploration:

2.1 TREND IN THE NUMBER OF ORDERS OVER THE PAST YEARS

SELECT
EXTRACT(YEAR FROM order_purchase_timestamp) AS order_year,
COUNT(*) AS order_count
FROM `target_study.orders`
GROUP BY order_year
ORDER BY order_year;

JOB INFORMATION	RESULTS	JSON	EXECUTION DETAILS	CHART PREVIEW	EXECUTION GRAPH

Row	order_year ▼	order_count ▼			
1	2016	329			
2	2017	45101			
3	2018	54011			

INSIGHTS: DATA PROVIDE INFORMATION LIKE INCREASE IN SALES FROM 2016 TO 2018, WITH A SIGNIFICANT JUMP IN 2017 BUT IN 2018 LITTLE SLOW.

RECOMMENDATIONS: LET'S KEEP DOING THE THINGS THAT ARE WORKING TO GET MORE CUSTOMERS AND KEEP THEM COMING BACK. CAN ALSO TRY NEW THINGS, LIKE LOYALTY PROGRAMS OR BETTER SERVICE, TO GROW EVEN FASTER.

2.2 MONTHLY SEASONALITY IN THE NUMBER OF ORDERS

SELECT
EXTRACT(MONTH FROM order_purchase_timestamp) AS order_month,
COUNT(*) AS order_count
FROM `target_study.orders`
GROUP BY order_month
ORDER BY order_month;

Query results

Row	order_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
9	9	4305
10	10	4959

INSIGHTS: OBSERVED THAT SALES ARE HIGHER IN AUGUST AND MAY, AND LOWER IN SEPTEMBER.

RECOMMENDATIONS: HAVE TO FIND OUT WHY SALES ARE HIGH IN AUGUST AND MAY, AND TRY TO DO THE SAME THING IN OTHER MONTHS.

2.3 TIME OF DAY ANALYSIS FOR BRAZILIAN CUSTOMERS

SELECT
CASE
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 0 AND 6 THEN 'Dawn'
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 7 AND 12 THEN 'Morning'
WHEN EXTRACT(HOUR FROM order_purchase_timestamp) BETWEEN 13 AND 18 THEN 'Afternoon'
ELSE 'Night'
END AS time_of_day,
COUNT(*) AS order_count
FROM `target_study.orders`
GROUP BY time_of_day
ORDER BY time_of_day;

Query results

JOB INFORMATION	RESULTS	JSON	EXECUTION DETAILS

Row	time_of_day	order_count
1	Afternoon	38135
2	Dawn	5242
3	Morning	27733
4	Night	28331

INSIGHTS: BRAZILIAN CUSTOMERS PLACE THE MOST ORDERS IN THE AFTERNOON, FOLLOWED BY THE MORNING AND NIGHT. THERE ARE THE FEWEST ORDERS AT DAWN.

RECOMMENDATIONS: HAVE TO ANNOUNCE MORE OFFER, SPECIAL DEALS AND PERSONALIZED EXPERIENCES TO KEEP CUSTOMERS ENGAGED AND CAREFUL ABOUT HOW CUSTOMERS BEHAVE AND CHANGE STRATEGIES ACCORDINGLY AND LOOK AT WHAT COMPETITORS ARE DOING AND SEE IF THERE ARE ANY WAYS CAN IMPROVE.

3. EVOLUTION OF E-COMMERCE ORDERS IN THE BRAZIL REGION:

3.1 GET THE MONTH ON MONTH NO. OF ORDERS PLACED IN EACH STATE

```
WITH x1 AS (
SELECT o.customer_id, o.order_id, DATE(o.order_purchase_timestamp) AS date_detail
FROM target_study.orders o
),
x2 AS (
SELECT t.order_id, c.customer_state, t.date_detail
FROM x1 t
INNER JOIN target_study.customers c ON t.customer_id = c.customer_id
),
x3 AS (
SELECT
COUNT(order_id) AS counter,
EXTRACT(YEAR FROM date_detail) AS Year,
EXTRACT(MONTH FROM date_detail) AS Month,
customer_state
FROM x2
GROUP BY EXTRACT(YEAR FROM date_detail), EXTRACT(MONTH FROM date_detail),
customer_state
)
SELECT *
FROM x3
ORDER BY Year, Month, customer_state;
```

Query results

| | JOB INFORMATION | RESULTS | JSON | EXECUTION DETAILS | CHART | PREVIEW |

Row	counter ▾	Year ▾	Month ▾	customer_state ▾
1	1	2016	9	RR
2	1	2016	9	RS
3	2	2016	9	SP
4	2	2016	10	AL
5	4	2016	10	BA
6	8	2016	10	CE
7	6	2016	10	DF
8	4	2016	10	ES
9	9	2016	10	GO
10	4	2016	10	MA
11	40	2016	10	MG

INSIGHTS: THE DATA SHOWS PEOPLE IN MG ORDERED THE MOST IN JULY.

RECOMMENDATIONS: OFFER SOME SPECIAL DEALS DURING PEAK MONTHS AT MG TO INCREASE SALE AND CONSIDER REGIONAL PROMOTIONS TO BALANCE ORDER DISTRIBUTION ACROSS ALL AREA. MAKE SURE HAVE ENOUGH OF THE RIGHT PRODUCTS IN STOCK.

3.2 HOW ARE THE CUSTOMERS DISTRIBUTED ACROSS ALL THE STATES

SELECT
customer_state,
COUNT(DISTINCT customer_id) AS unique_customer_count
FROM target_study.customers
GROUP BY customer_state;

Query results

	JOB INFORMATION	RESULTS	JSON	EXECUTION DETAILS

Row	customer_state ▾	unique_customer_co
1	RN	485
2	CE	1336
3	RS	5466
4	SC	3637
5	SP	41746
6	MG	11635
7	BA	3380
8	RJ	12852
9	GO	2020
10	MA	747

INSIGHTS: CUSTOMERS ARE NOT EVENLY DISTRIBUTED ACROSS BRAZILIAN STATES. OBSERVED TWO STATES WITH THE MOST CUSTOMERS ARE DF AND PI

RECOMMENDATIONS: OFFER SOME SPECIAL DEALS AND PROMOTIONS IN STATES WITH FEWER CUSTOMERS AND ALSO TRY TO FIND OUT WHY SOME STATES HAVE MORE CUSTOMERS THAN OTHERS. THIS INFORMATION CAN BE USE TO IMPROVE MARKETING AND SALES STRATEGIES.

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

SELECT
*   EXTRACT(YEAR FROM order_purchase_timestamp) AS order_year,*
*   EXTRACT(MONTH FROM order_purchase_timestamp) AS order_month,*
*   ROUND (SUM(payment_value),2) AS total_payment*
FROM `target_study.orders` o
JOIN `target_study.payments` p ON o.order_id = p.order_id
WHERE EXTRACT(YEAR FROM order_purchase_timestamp) IN (2017, 2018)
*   AND EXTRACT(MONTH FROM order_purchase_timestamp) BETWEEN 1 AND 8*

GROUP BY order_year, order_month
ORDER BY order_year, order_month;

Query results

	JOB INFORMATION	**RESULTS**	JSON	EXECUTION DETAILS

Row	order_year ▼	order_month ▼	total_payment ▼
1	2017	1	138488.04
2	2017	2	291908.01
3	2017	3	449863.6
4	2017	4	417788.03
5	2017	5	592918.82
6	2017	6	511276.38
7	2017	7	592382.92
8	2017	8	674396.32
9	2018	1	1115004.18
10	2018	2	992463.34

Load more

INSIGHTS: PEOPLE SPENT MORE MONEY ON ONLINE SHOPPING IN 2018 THAN IN 2017.

RECOMMENDATIONS: HAVE TO LOOK AFTER THAT WHY MOSTLY PEOPLE ARE SPENDING MORE MONEY ON ONLINE SHOPPING AND ALSO CAN USE THIS INFORMATION TO IMPROVE SALES.

4.2 CALCULATE THE TOTAL & AVERAGE VALUE OF ORDER PRICE FOR EACH STATE

SELECT
  c.customer_state,
  ROUND(SUM(oi.price), 2) AS total_order_price,
  ROUND(AVG(oi.price), 2) AS avg_order_price
FROM `target_study.customers` c
join `target_study.orders` o on c.customer_id = o.customer_id
join `target_study.order_items` oi ON o.order_id = oi.order_id
GROUP by c.customer_state;

Query results

	JOB INFORMATION	**RESULTS**	JSON	EXECUTION DETAILS

Row	customer_state ▼	total_order_price ▼	avg_order_price ▼
1	RN	83035.0	157.0
2	CE	227255.0	154.0
3	RS	750304.0	120.0
4	SC	520553.0	125.0
5	SP	5202955.0	110.0
6	MG	1585308.0	121.0
7	BA	511350.0	135.0
8	RJ	1824093.0	125.0
9	GO	294592.0	126.0
10	MA	119648.0	145.0
11	PE	262788.0	146.0

INSIGHTS: OBSERVED THAT SOME STATES, LIKE **PI**, **AL** AND **DF** HAVE HIGHER AVERAGE ORDER PRICES. LOWEST AVERAGE ORDER PRICE STATES LIKE **AM** AND **RR.**

RECOMMENDATIONS: FOCUS MARKETING EFFORTS ON STATES WITH LOWER AVERAGE ORDER PRICES, SUCH AS RR AND AM. OFFER LOWER PRICES OR SPECIAL DEALS IN THESE STATES TO ATTRACT MORE CUSTOMERS.

4.3 CALCULATE THE TOTAL & AVERAGE VALUE OF ORDER FREIGHT FOR EACH STATE

```
SELECT
   c.customer_state,
   ROUND(SUM(oi.freight_value), 2) AS total_freight_value,
   ROUND(AVG(oi.freight_value), 2) AS avg_freight_value
FROM `target_study.customers` c
JOIN `target_study.orders` o ON c.customer_id = o.customer_id
JOIN `target_study.order_items` oi ON o.order_id = oi.order_id
GROUP BY c.customer_state;
```

Query results

JOB INFORMATION	RESULTS	JSON	EXECUTION DETAILS	
Row	customer_state		total_freight_value	avg_freight_value
1	MT		29715.43	28.17
2	MA		31523.77	38.26
3	AL		15914.59	35.84
4	SP		718723.07	15.15
5	MG		270853.46	20.63
6	PE		59449.66	32.92
7	RJ		305589.31	20.96
8	DF		50625.5	21.04
9	RS		135522.74	21.74
10	SE		14111.47	36.65
11	PR		117851.68	20.53

INSIGHTS: SHIPPING IS MORE EXPENSIVE IN SOME STATES THAN OTHERS. STATES LIKE **RR** AND **AC** HAVE RELATIVELY HIGHER AVERAGE FREIGHT VALUES, WHILE **MS** AND **TO** HAVE LOWER AVERAGE FREIGHT VALUES.

RECOMMENDATIONS: LOWER SHIPPING COSTS IN HIGH-COST STATES BY USING DIFFERENT CARRIERS, NEGOTIATING DISCOUNTS, OR OFFERING FREE SHIPPING. KEEP SHIPPING COSTS LOW IN LOW-COST STATES TO KEEP CUSTOMERS HAPPY.

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.

```
SELECT
  order_id,
    TIMESTAMP_DIFF(order_delivered_customer_date,  order_purchase_timestamp,  DAY)  AS
delivery_time,
    TIMESTAMP_DIFF(order_delivered_customer_date,  order_estimated_delivery_date,  DAY)  AS
diff_estimated_delivery
FROM `target_study.orders`
WHERE order_delivered_customer_date IS NOT NULL;
```

Query results

JOB INFORMATION	RESULTS	JSON	EXECUTION DETAILS

Row	ORDER_ID ▼	DELIVERY_TIME ▼	DIFF_ESTIMATED_DE
1	1950d777989f6a877539f5379...	30	12
2	2c45c33d2f9cb8ff8b1c86cc28...	30	-28
3	65d1e226dfaeb8cdc42f66542...	35	-16
4	635c894d068ac37e6e03dc54e...	30	-1
5	3b97562c3aee8bdedcb5c2e45...	32	0
6	68f47f50f04c4cb6774570cfde...	29	-1
7	276e9ec344d3bf029ff83a161c...	43	4
8	54e1a3c2b97fb0809da548a59...	40	4
9	fd04fa4105ee8045f6a0139ca5...	37	1
10	302bb8109d097a9fc6e9cefc5...	33	5
11	66057d37308e787052a32828...	38	6

INSIGHTS: OBSERVED SOME ORDERS TOOK LONGER TO DELIVER THAN EXPECTED, WHILE OTHERS TOOK LESS TIME.

RECOMMENDATIONS: ANALYZE WHY SOME ORDERS TOOK LONGER TO DELIVER AND TRY TO FIX IT.

5.2 FIND OUT THE TOP 5 STATES WITH THE HIGHEST & LOWEST AVERAGE FREIGHT VALUE

> ➢ TOP 5 STATES WITH HIGHEST AVERAGE FREIGHT VALUE:

```
SELECT
  c.customer_state,
  ROUND(AVG(oi.freight_value), 2) AS avg_freight_value
FROM `target_study.customers` c
JOIN `target_study.orders` o ON c.customer_id = o.customer_id
JOIN `target_study.order_items` oi ON o.order_id = oi.order_id
GROUP BY c.customer_state
ORDER BY avg_freight_value DESC
LIMIT 5;
```

Query results

	JOB INFORMATION	RESULTS	JSON	EXEC

Row	customer_state ▼	avg_freight_value ▼
1	RR	42.98
2	PB	42.72
3	RO	41.07
4	AC	40.07
5	PI	39.15

INSIGHTS: OBSERVED THAT SHIPPING IS MORE EXPENSIVE IN THESE STATES: RR, PB, RO, AC AND PI

RECOMMENDATIONS: CONSIDER OPTIMIZING SHIPPING STRATEGIES AND LOGISTICS IN THESE STATES TO POTENTIALLY REDUCE AVERAGE FREIGHT COSTS AND IMPROVE COST-EFFICIENCY FOR CUSTOMERS IN THESE REGIONS.

➢ **TOP 5 STATES WITH LOWEST AVERAGE FREIGHT VALUE**:

SELECT
  c.customer_state,
  ROUND(AVG(oi.freight_value), 2) AS avg_freight_value
FROM `target_study.customers` c
JOIN `target_study.orders` o ON c.customer_id = o.customer_id
JOIN `target_study.order_items` oi ON o.order_id = oi.order_id
GROUP BY c.customer_state
ORDER BY avg_freight_value
LIMIT 5;

Query results

	JOB INFORMATION	RESULTS	JSON	EXECl

Row	customer_state ▼	avg_freight_value ▼
1	SP	15.15
2	PR	20.53
3	MG	20.63
4	RJ	20.96
5	DF	21.04

INSIGHTS: THESE ARE THE STATES WHERE SHIPPING COSTS LESS THAN OTHERS.

RECOMMENDATIONS: MAINTAIN SHIPPING COSTS LOW IN THE STATES WHERE THEY'RE ALREADY LOW. THIS WILL MAKE CUSTOMERS HAPPY AND HELP YOU KEEP THEM COMING BACK.

5.3 FIND OUT THE TOP 5 STATES WITH THE HIGHEST & LOWEST AVERAGE DELIVERY TIME

> ➢ TOP 5 STATES WITH HIGHEST AVERAGE DELIVERY TIME:

```
SELECT
  c.customer_state,
      ROUND(AVG(date_diff(o.order_delivered_customer_date,    o.order_purchase_timestamp,
day))) AS avg_delivery_time
FROM `target_study.customers` c
JOIN `target_study.orders` o ON c.customer_id = o.customer_id
WHERE o.order_delivered_customer_date IS NOT NULL
GROUP BY c.customer_state
ORDER BY avg_delivery_time DESC
LIMIT 5;
```

Query results

	JOB INFORMATION	RESULTS	JSON	EXECUTI

Row	customer_state ▼	avg_delivery_time ▼
1	RR	29.0
2	AP	27.0
3	AM	26.0
4	AL	24.0
5	PA	23.0

INSIGHTS: OBSERVED THAT IT TAKES LONGER TO DELIVER ORDERS TO SOME STATES THAN OTHERS, LIKE **RR, AP, AM, AL,** AND **PA**.

RECOMMENDATIONS: HAVE TO FIND WAYS TO GET ORDERS TO THESE STATES FASTER. TARGET COULD TRY USING DIFFERENT SHIPPING CARRIERS, OFFERING EXPEDITED SHIPPING, OR BUILDING LOCAL WAREHOUSES.

> ➢ TOP 5 STATES WITH LOWEST AVERAGE DELIVERY TIME:

```
SELECT
  c.customer_state,
      ROUND(AVG(date_diff(o.order_delivered_customer_date,    o.order_purchase_timestamp,
day))) AS avg_delivery_time
FROM `target_study.customers` c
JOIN `target_study.orders` o ON c.customer_id = o.customer_id
```

WHERE o.order_delivered_customer_date IS NOT NULL
GROUP BY c.customer_state
ORDER BY avg_delivery_time
LIMIT 5;

Query results

	JOB INFORMATION	**RESULTS**	JSON	EXECUTION DETAILS

Row	customer_state ▼	avg_delivery_time ▼
1	SP	8.0
2	MG	12.0
3	PR	12.0
4	DF	13.0
5	SC	14.0

INSIGHTS: OBSERVED THAT ORDERS TAKE LESS TIME TO ARRIVE IN ABOVE MENTIONED STATES THAN OTHERS.

RECOMMENDATIONS: MAINTAIN DELIVERING ORDERS FASTER IN THE STATES WHERE THEY ALREADY ARRIVE QUICKLY. MAKE SURE CUSTOMERS ARE HAPPY WITH DELIVERY SERVICE.

5.4 **FIND THE TOP 5 STATES WHERE ORDER DELIVERY IS FASTER COMPARED TO THE ESTIMATED DELIVERY DATE**

SELECT
  c.customer_state,
  ROUND(AVG(DATE_DIFF(o.order_delivered_customer_date, o.order_estimated_delivery_date, DAY))) AS avg_delivery_speed
FROM `target_study.customers`c
JOIN `target_study.orders`o ON c.customer_id = o.customer_id
WHERE o.order_delivered_customer_date IS NOT NULL
GROUP BY c.customer_state
ORDER BY avg_delivery_speed ASC
LIMIT 5;

Query results

Row	customer_state ▼	avg_delivery_speed
1	AC	-20.0
2	AP	-19.0
3	AM	-19.0
4	RO	-19.0
5	RR	-16.0

INSIGHTS: OBSERVED THAT ORDERS ARE DELIVERED MUCH FASTER THAN EXPECTED IN ABOVE MENTIONED STATES.

RECOMMENDATIONS: TRY TO FIND OUT HOW CAN BE THIS MUCH EFFICIENCY OF LOGISTICS AND DELIVERY SERVICES IN THESE STATES, WHERE ORDERS ARE CONSISTENTLY DELIVERED WELL AHEAD OF THE ESTIMATED DELIVERY DATE. COMPARE THE ESTIMATED DELIVERY TIMES FOR THESE STATES TO THE ACTUAL DELIVERY TIMES. IF THE ACTUAL DELIVERY TIMES ARE CONSISTENTLY MUCH FASTER, UPDATE THE ESTIMATED DELIVERY TIMES TO BE MORE ACCURATE.

6. ANALYSIS BASED ON THE PAYMENTS:

6.1 FIND THE MONTH ON MONTH NO. OF ORDERS PLACED USING DIFFERENT PAYMENT TYPES.

```
SELECT
    EXTRACT(YEAR FROM o.order_purchase_timestamp) AS order_year,
    EXTRACT(MONTH FROM o.order_purchase_timestamp) AS order_month,
    p.payment_type,
    COUNT(DISTINCT o.order_id) AS num_orders
FROM `target_study.payments` P
JOIN `target_study.orders` o on P.order_id = o.order_id
GROUP BY order_year, order_month, p.payment_type
ORDER BY order_year;
```

Query results

Row	order_year ▼	order_month ▼	payment_type ▼	num_orders ▼
1	2016	10	credit_card	253
2	2016	10	voucher	11
3	2016	10	debit_card	2
4	2016	10	UPI	63
5	2016	12	credit_card	1
6	2016	9	credit_card	3
7	2017	4	voucher	115
8	2017	10	voucher	208
9	2017	6	voucher	142
10	2017	5	voucher	171

INSIGHTS: CREDIT CARDS AND VOUCHERS WERE POPULAR IN 2017. PEOPLE PAID FOR THEIR ORDERS IN DIFFERENT WAYS IN 2016 AND 2017.

RECOMMENDATIONS: FIRST OF ALL, CONTINUE TO PROMOTE AND SUPPORT DIFFERENT PAYMENT OPTIONS, ESPECIALLY CREDIT CARDS AND VOUCHERS, TO ACCOMMODATE CUSTOMER PREFERENCES. SHOULD HAVE TO PROVIDE CLEAR INFORMATION ON HOW TO USE VOUCHERS FOR PURCHASES.

6.2 FIND THE NO. OF ORDERS PLACED ON THE BASIS OF THE PAYMENT INSTALLMENTS THAT HAVE BEEN PAID

SELECT
  payment_installments,
  COUNT(DISTINCT order_id) AS number_orders
FROM `target_study.payments`
WHERE payment_installments > 0
GROUP BY payment_installments
ORDER BY payment_installments;

Query results

Row	PAYMENT_INSTALLM	NUMBER_ORDERS
1	1	49060
2	2	12389
3	3	10443
4	4	7088
5	5	5234
6	6	3916
7	7	1623
8	8	4253
9	9	644
10	10	5315

INSIGHTS: OBSERVED THAT PEOPLE PAID FOR THEIR ORDERS IN DIFFERENT WAYS. THE MOST COMMON WAY WAS TO PAY ALL AT ONCE, BUT MANY PEOPLE ALSO PAID IN INSTALLMENTS.

RECOMMENDATIONS: HAVE TO CONTINUE PROMOTE OFFER FOR INSTALLMENT OPTIONS TO CATER TO ALL TYPE OF CUSTOMER PREFERENCES. SHOULD HAVE TO ENSURE THAT PAYMENT INSTALLMENT DETAILS ARE CLEARLY CONVEY TO CUSTOMERS DURING THE PROCESS.

SUMMARIZATION OF TARGET BUSINESS CASE

KEY FINDINGS:

TARGET'S CUSTOMER BASE IS GROWING, WITH A SIGNIFICANT INCREASE IN SALES FROM 2016 TO 2017.

CUSTOMERS IN RIO BRANCO AND ARAPIRACA, BRAZIL, PLACE A HIGH NUMBER OF ORDERS.

SALES PEAK IN AUGUST AND MAY AND AGAIN DOWN IN SEPTEMBER.

BRAZILIAN CUSTOMERS PREFER TO PLACE ORDERS IN THE AFTERNOON.

SHIPPING COSTS VARY ACROSS ALL STATES.

SOME ORDERS TAKE LONGER TO DELIVER THAN THE ESTIMATED DATE.

CREDIT CARDS AND VOUCHERS ARE POPULAR PAYMENT METHODS.

CUSTOMERS HAVE DIFFERENT-2 PAYMENT PREFERENCES.

RECOMMENDATIONS:

TARGET CAN CONSIDER REGIONAL PROMOTIONS TO BALANCE ORDER DISTRIBUTION.

PROMOTIONS, DISCOUNTS, OR TAILORED MARKETING CAN BE EMPLOYED TO ADDRESS DIFFERENCES IN SPENDING BEHAVIOR.

STRATEGIES LIKE OPTIMIZING SHIPPING CARRIERS AND OFFERING FREE SHIPPING CAN ENHANCE COST-EFFICIENCY AND CUSTOMER SATISFACTION.

ANALYZING WHY SOME ORDERS TAKE LONGER TO DELIVER IS CRUCIAL FOR IMPROVING LOGISTICS.

TARGET SHOULD CONTINUE PROMOTING VARIOUS PAYMENT OPTIONS AND PROVIDE CLEAR INFORMATION ON VOUCHER USAGE.

PROMOTING INSTALLMENT OPTIONS AND ENSURING CLEAR COMMUNICATION DURING THE PAYMENT PROCESS CAN PROVIDE TO A BIGGER CUSTOMER BASE.

CONCLUSION: THIS ANALYSIS PROVIDES TARGET WITH A ROADMAP FOR ENHANCING MARKETING STRATEGIES, OPTIMIZING LOGISTICS, AND TAILORING PAYMENT OPTIONS TO MEET CUSTOMER PREFERENCES. THESE INSIGHTS AND RECOMMENDATIONS CAN DRIVE GROWTH, IMPROVE CUSTOMER SATISFACTION, AND STRENGTHEN TARGET'S POSITION IN THE E-COMMERCE MARKET WORLDWIDE.

SUMMARY: TARGET CAN IMPROVE ITS BUSINESS BY UNDERSTANDING ITS CUSTOMERS BETTER AND OFFERING THEM MORE TAILORED PRODUCTS, SERVICES, AND EXPERIENCES. THIS CAN BE DONE BY ANALYZING CUSTOMER DATA, IDENTIFYING TRENDS AND PATTERNS, AND DEVELOPING STRATEGIES TO ADDRESS THEM.