#### CONSUMER PURCHASING BEHAVIOUR AND LOYALTY SCORE

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## <u>ABSTRACT</u>

The "Consumer Purchasing Behaviour and Loyalty Score" project aims to analyse the intricate relationship between consumer purchasing habits and their corresponding loyalty scores. By leveraging two datasets—Consumer Purchasing Behaviour and Consumer Loyalty—we will explore various factors that influence consumer spending and brand allegiance.

The Consumer Purchasing Behaviour dataset includes essential demographic information such as age, annual income, and total purchase amounts, which allows for a nuanced understanding of spending patterns across different consumer segments. Meanwhile, the Consumer Loyalty dataset provides insights into loyalty scores, regions, and purchase frequencies, facilitating the assessment of consumer engagement and retention.

Ultimately, the findings from this project aim to equip businesses with actionable insights that enhance their understanding of consumer behaviour, allowing for more targeted marketing efforts and improved customer satisfaction. This research holds significant implications for businesses seeking to foster loyalty and maximize revenue in an increasingly competitive market landscape.

#### CONSUMER PURCHASING BEHAVIOUR AND LOYALTY SCORE

#### **PROJECT FOR SQL MODULE**

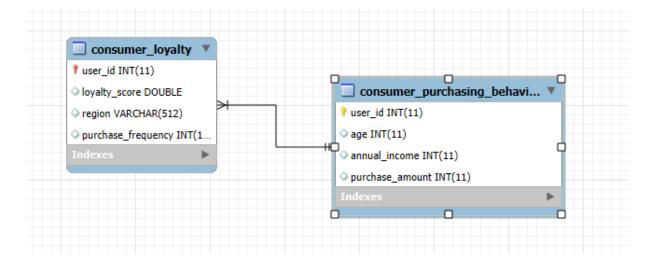
## Objectives

- Analyse Consumer Demographics: Examine the demographic factors (age, annual income) that influence purchasing behaviour and loyalty scores.
- 2. **Identify Spending Patterns**: Identify patterns in purchase amounts and frequencies across different consumer segments.
- 3. **Evaluate Loyalty Factors**: Assess how loyalty scores relate to consumer engagement and purchasing frequency.
- 4. **Segment Consumers**: Create consumer segments based on purchasing behaviour and loyalty scores to target marketing strategies effectively.
- 5. **Develop Recommendations**: Formulate actionable recommendations for businesses to enhance customer loyalty and optimize marketing strategies.

## <u>Aim</u>

To comprehensively understand the relationship between consumer purchasing behaviours and loyalty scores, providing businesses with data-driven insights to enhance customer engagement, retention, and overall profitability.

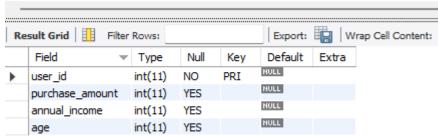
## ER-DIAGRAM(ENTITY RELATION- DIAGRAM) FOR CONSUMER PURCHASING BEHAVIOUR



### TABLE DESCRIPION

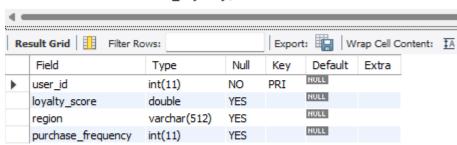
#### TABLE 1:-CONSUMER PURCHASING BEHAVIOUR

10 • desc Consumer\_Purchasing\_Behavior;



### TABLE 2:- CONSUMER\_LOYALTY

259 • desc Consumer\_Loyalty;

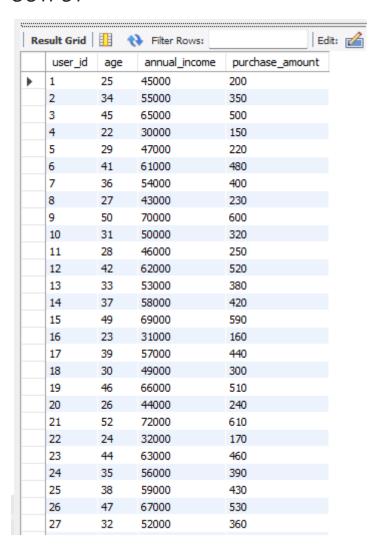


## **QUERIES:-**

1. QUERY:-SELECT FROM CONSUMER\_PURCHASING\_BEHAVIOR

CODE:-select \*from Consumer\_Purchasing\_Behavior;

#### **OUTPUT**

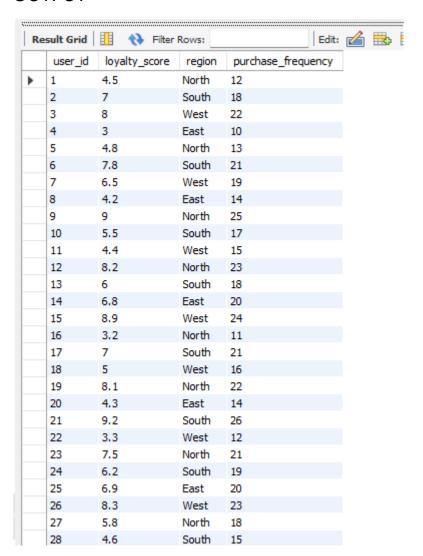


#### 2. OUERY:-

#### SELECT FROM CONSUMER LOYALTY

CODE:-select \*from Consumer\_Loyalty;

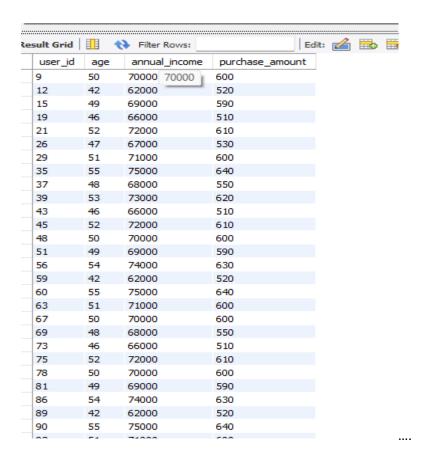
#### **OUTPUT**



#### FIND USERS WITH PURCHASE AMOUNT GREATER THAN 500Rs

CODE:-select \*from consumer\_purchasing\_behavior where purchase\_amount>500;

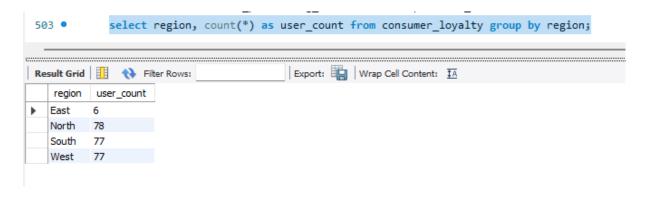
#### **OUTPUT**



Count the number of users in each region

CODE:-select region, count(\*) as user\_count from consumer\_loyalty group by region;

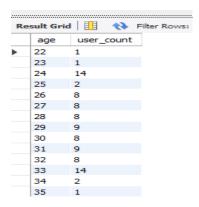
#### **OUTPUT**



#### 5. QUERY:-COUNT OF USERS BY AGE GROUP

CODE:-select age,count(user\_id) as user\_count from consumer\_purchasing\_behavior group by age;

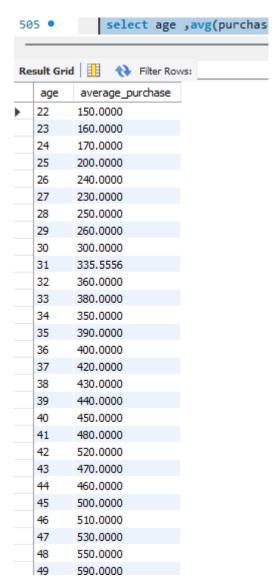
#### **OUTPUT**



AVERAGE PURCHASE AMOUNT FOR EACH AGE.

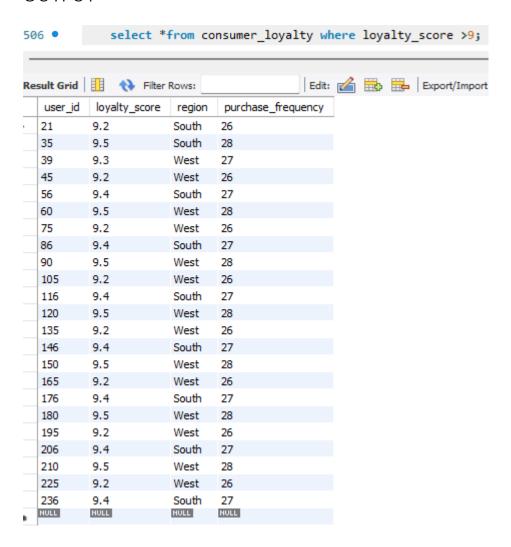
CODE:-select age ,avg(purchase\_amount) as average\_purchase from consumer\_purchasing\_behavior group by age;

#### **OUTPUT**



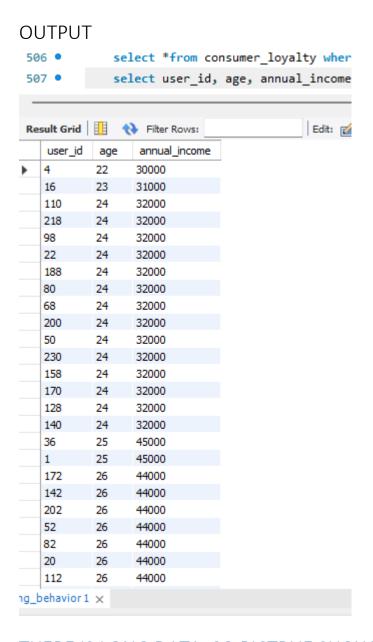
#### FIND USERS WITH A LOYALTY SCORE GREATER THAN SPECIFIC VALUE

CODE:-select \*from consumer\_loyalty where loyalty\_score >9;



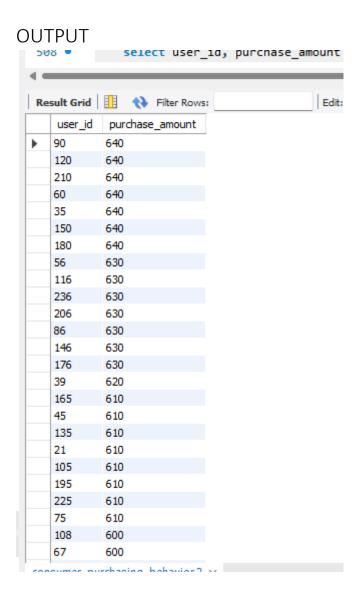
HOW ARE CONSUMER ORDERED BY AGE(ASCENDING) AND FOR THOSE WITH THE SAME AGE, BY ANNUAL INCOME(DESCENDING)?

CODE:- select user\_id, age, annual\_income from consumer\_purchasing\_behavior order by age asc, annual\_income desc;



HOW ARE CONSUMER RANKED BASED ON THEIR PURCHASE AMOUNTS, FROM HIGHEST TO LOWEST?

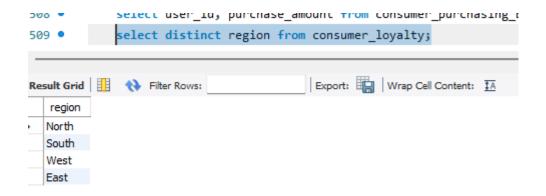
CODE:-select user\_id, purchase\_amount from consumer\_purchasing\_behavior order by purchase\_amount desc;



WHAT ARE THE DISTINCT REGIONS REPRESENTED IN THE CONSUMER LOYALTY DATASET?

#### CODE:-

select distinct region from consumer\_loyalty;



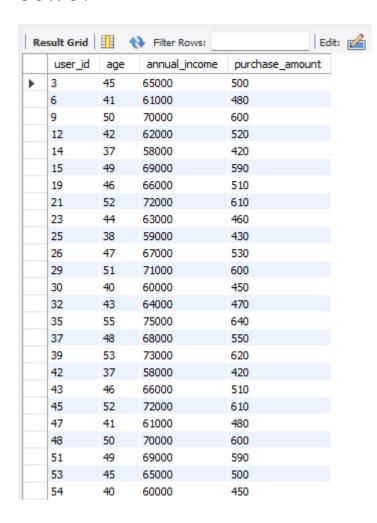
#### **SUBQUERIES**

#### 1.QUERY

#### FIND USERS WITH AN ANNUAL INCOME ABOVE THE AVERAGE

CODE:-select \* from consumer\_purchasing\_behavior where annual\_income > (select avg (annual\_income) from consumer purchasing behavior);

#### **OUTPUT**



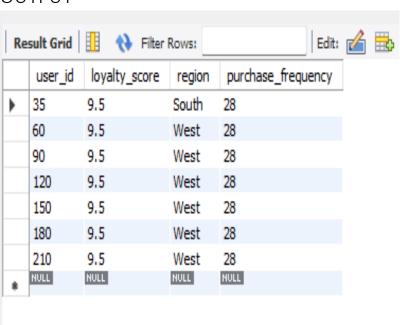
#### USERS FROM A SPECIFIC REGION WITH HIGH LOYALTY.

CODE:- select user\_id from Consumer\_Loyalty where region = 'North' and loyalty\_score > (select avg(loyalty\_score) from Consumer\_Loyalty where region = 'North');

#### **OUTPUT** Result Grid user\_id Consumer Lovalty 5 V

#### FIND USERS WITH HIGHEST PURCHASE FREQUENCY

CODE:-select \* from consumer\_loyalty where purchase\_frequency
=(select max(purchase\_frequency) from consumer\_loyalty)



USER WHO MADE MORE THAN THE AVERAGE NUMBER OF PURCHASES

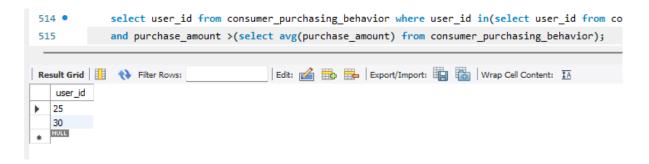
CODE:- select \* from consumer\_loyalty where purchase\_frequency
>(select avg (purchase\_frequency) from consumer\_loyalty);

#### **OUTPUT**



USERS WITH HIGHER PURCHASE AMOUNTS IN SPECIFIC REGION(EAST)

CODE:- select user\_id from consumer\_purchasing\_behavior where user\_id in(select user\_id from consumer\_loyalty where region='east')and purchase\_amount >(select avg(purchase\_amount) from consumer\_purchasing\_behavior);



MAXIMUM PURCHASE AMOUNT FOR USERS IN A SPECIFIC REGION(WEST)

CODE:- select max(purchase\_amount) as max\_purchase from Consumer\_Purchasing\_Behavior where user\_id in (SELECT user\_id FROM Consumer\_Loyalty WHERE region = 'WEST');



#### USERS WHOSE AGE MATCHES PURCHASE FREQUENCY

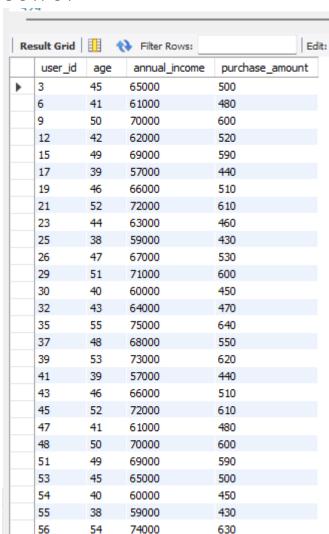
CODE:- select user\_id from Consumer\_Loyalty where user\_id in (select user\_id from Consumer\_Purchasing\_Behavior where age = (select purchase\_frequency from Consumer\_Loyalty where user\_id = Consumer\_Purchasing\_Behavior.user\_id));



#### FIND USERS WHO ARE BOTH HIGH SPENDERS AND HIGHLY LOYAL.

CODE:- select \* from consumer\_purchasing\_behavior where user\_id in (select user\_id from consumer\_loyalty where loyalty\_score>(select avg(loyalty\_score) from consumer\_loyalty)) and purchase\_amount>(select avg(purchase\_amount) from consumer\_purchasing\_behavior);

#### **OUTPUT**



#### **JOINS QUERIES**

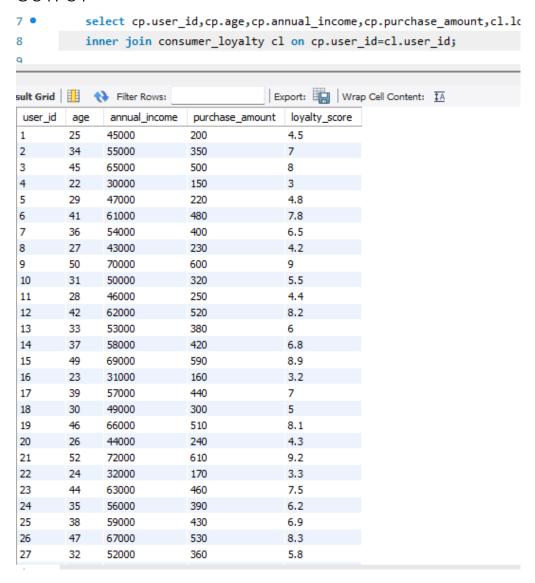
#### 1.QUERY

#### DETAILS OF USERS ALONG WITH LOYALTY SCORE

#### CODE:- select

cp.user\_id,cp.age,cp.annual\_income,cp.purchase\_amount,cl.loyalty\_s core from consumer\_purchasing\_behavior cp inner join consumer\_loyalty cl on cp.user\_id=cl.user\_id;

#### **OUTPUT**



WHAT ARE ALL CONSUMER'S PURCHASING BEHAVIOUR AND DO THEY HAVE A CORRESPONDING PURCHASE FREQUENCY?

#### CODE:- select

cp.user\_id,cp.age,cp.annual\_income,cp.purchase\_amount,cl.purchas e\_frequency from consumer\_purchasing\_behavior cp Left join consumer\_loyalty cl on cp.user\_id=cl.user\_id;

OUTPUT

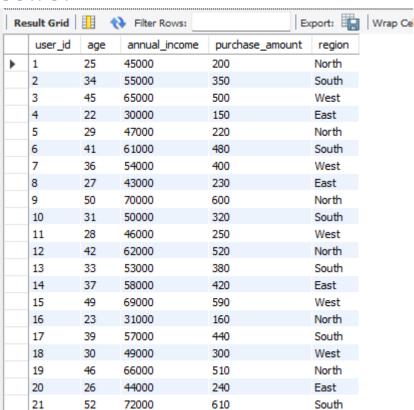
esult Grid	1 1	Filter Rows:	Export: Wrap Cell Content:		
user_id	age	annual_income	purchase_amount	purchase_frequency	
1	25	45000	200	12	
2	34	55000	350	18	
3	45	65000	500	22	
4	22	30000	150	10	
5	29	47000	220	13	
6	41	61000	480	21	
7	36	54000	400	19	
8	27	43000	230	14	
9	50	70000	600	25	
10	31	50000	320	17	
11	28	46000	250	15	
12	42	62000	520	23	
13	33	53000	380	18	
14	37	58000	420	20	
15	49	69000	590	24	
16	23	31000	160	11	
17	39	57000	440	21	
18	30	49000	300	16	
19	46	66000	510	22	
20	26	44000	240	14	
21	52	72000	610	26	
22	24	32000	170	12	
23	44	63000	460	21	
24	35	56000	390	19	
25	38	59000	430	20	
26	47	67000	530	23	
27	32	52000	360	18	

## WHAT ARE THE REGION OF USERS AND WHAT ARE THEIR PURCHASING BEHAVIOURS IF AVAILABLE?

#### CODE:- select

cp.user\_id,cp.age,cp.annual\_income,cp.purchase\_amount,cL.region from consumer\_purchasing\_behavior cp right join consumer\_loyalty cl on cp.user\_id=cl.user\_id;

#### **OUTPUT**



WHAT ARE DETAILS OF ALL CONSUMER AND LOYALTY SCORE AND REGOIN(NORTH) CORRESPONDING RCORDS IN OTHER TABLE?

#### CODE:- select

cp.user\_id,cp.age,cp.annual\_income,cp.purchase\_amount,cL.region,c l.loyalty\_score from consumer\_purchasing\_behavior cp join consumer\_loyalty cl on cp.user\_id=cl.user\_id where region="NORTH";

#### OUTPUT

lt Grid	<u> </u>	Filter Rows:	E	xport:	Wrap Cell Content
user_id	age	annual_income	purchase_amount	region	loyalty_score
1	25	45000	200	North	4.5
5	29	47000	220	North	4.8
9	50	70000	600	North	9
12	42	62000	520	North	8.2
16	23	31000	160	North	3.2
19	46	66000	510	North	8.1
23	44	63000	460	North	7.5
27	32	52000	360	North	5.8
31	34	55000	350	North	6.5
34	27	43000	230	North	4
37	48	68000	550	North	8.5
40	28	46000	250	North	4.2
43	46	66000	510	North	8.1
46	29	47000	220	North	4.4
49	36	54000	400	North	6.5
52	26	44000	240	North	4.3
55	38	59000	430	North	6.9

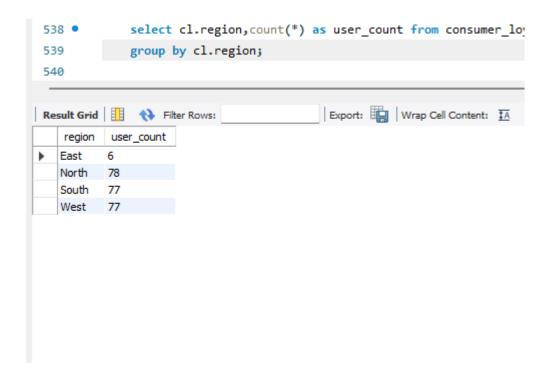
WHAT IS THE AVERAGE PURCHASE AMOUNT FOR EACH LOYALTY SCORE?

CODE:- select cl.loyalty\_score, avg (cp.purchase\_amount) as avg\_purchase\_amount from consumer\_purchasing\_behavior cp inner join consumer\_loyalty cl on cp.user\_id=cl.user\_id group by cl.loyalty\_score;

#### **OUTPUT** Export: Wrap C Result Grid Filter Rows: loyalty\_score avg\_purchase\_amount 150.0000 3.2 160.0000 3.3 170.0000 230.0000 4.2 247.5000 4.3 252.8571 4.4 235.0000 4.5 200,0000 4.6 280.0000 4.8 220.0000 300.0000 5.5 320,0000 5.6 340.0000 5.8 360.0000 380.0000 6.2 390.0000 6.5 394,4444

HOW MANY USERS ARE THERE IN EACH REGION BASED ON THEIR LOYAALTY?

CODE:- select cl.region,count(\*) as user\_count from consumer\_loyalty cl join consumer\_purchasing\_behavior cp on cp.user\_id=cl.user\_id group by cl.region;



LIST ALL PAIRS OF CONSUMER WITH THE SAME LOYALTY SCORE, INCLUDING THEIR USER ID'S AND SHARED LOYALTY SCORE.

#### CODE:- SELECT

cl1.user\_id AS User1\_ID,

cl1.loyalty\_score AS User1\_Loyalty\_Score,

cl2.user\_id AS User2\_ID, cl2.loyalty\_score AS User2\_Loyalty\_Score FROM Consumer\_Loyalty cl1 JOIN Consumer\_Loyalty cl2 ON cl1.loyalty\_score = cl2.loyalty\_score WHERE cl1.user\_id <> cl2.user\_id;

#### **OUTPUT**

	Filter Rows:		Export: Wrap Cell
User 1_ID	User1_Loyalty_Score	User2_ID	User2_Loyalty_Score
36	4.5	1	4.5
17	7	2	7
41	7	2	7
71	7	2	7
101	7	2	7 7
131	7	2	7
161	7	2	7
191	7	2	7
221	7	2	7
53	8	3	8
83	8	3	8
113	8	3	8
143	8	3	8
173	8	3	8
203	8	3	8
233	8	3	8
32	7.8	6	7.8

WHAT ARE THE USER'S PURCHASE AMOUNTS AND LOYALTY SCORES ORDERED FROM HIGHEST TO LOWEST PURCHASE AMOUNT AND LOYALTY SCORE?

CODE:- select cp.user\_id,cp.purchase\_amount,cl.loyalty\_score from consumer\_purchasing\_behavior cp\_join consumer\_loyalty cl on cp.user\_id=cl.user\_id order by cp.purchase\_amount desc, cl.loyalty\_score desc;

#### **OUTPUT**



**CONCLUSION:-**

## **Project Conclusion**

In this project, we established two tables:

Consumer\_Purchasing\_Behavior and Consumer\_Loyalty. The first table tracks users' purchasing habits, including their age, income, and spending. The second table measures consumer loyalty through a loyalty score, region, and purchase frequency. By connecting these tables, we can analyze the relationship between purchasing behavior and consumer loyalty. This data can help businesses understand their customers better and improve marketing strategies.

THANK YOU	