

Sales Performance Report Using SQL

About Dataset:- This project was provided by DQLab, and it included a dataset including 5500 rows of transactions reports from 2009 to 2012, with the order status field having the values 'Order Finished,' 'Order Returned,' and 'Order Cancelled.' The table dqlab_store_sales holds all of the information for this project. The following is an example of the dataset's appearance:

What the task given?.

The manager of DQLab Store needs to know the following information based on the information provided:

1. Number of Customers by Years.
2. Number of Orders by Years:
3. Promotion Effectiveness and Efficiency by Years.
4. Promotion Effectiveness and Efficiency by Product Sub-Category.
5. Customer Transactions per Year.
6. New Customers over the Year.

Let's solving this project !.

1. Number of Customers by Years.

Customers Transactions per Year & Analysis of customer every year Analysis of the number of new customers each year.

```
SELECT year(order_date) as years, count(distinct customer) as number_of_customer
FROM dqlab_sales_store
WHERE order_status = 'Order Finished'
GROUP BY year (order_date)
```

console(output)::

```
+-----+-----+
| years | number_of_customer |
+-----+-----+
| 2009 | 585 |
| 2010 | 593 |
| 2011 | 581 |
| 2012 | 594 |
+-----+-----+
```

We can see, total number of customers of DQLab store are changed over the year. The highest total customers are were in 2012 and it doesn't get higher after that.

2. Number of Orders by Years:

Overall Performance by Year (2009 — 2012) Number of orders & total sales order completed.

```
SELECT LEFT (order_date,4) as years,  
       SUM(sales) as sales,  
       COUNT(order_status) as number_of_order  
FROM dqlab_sales_store  
WHERE order_status = 'Order Finished'  
GROUP BY years
```

console(output)::

years	sales	number_of_order
2009	4613872681	1244
2010	4059100607	1248
2011	4112036186	1178
2012	4482983158	1254

We can see, total sales of DQLab store are changed over the year. The highest total sales were in 2009 and it doesn't get higher after that. But different from the number of order, it goes ride except in 2011. Although the change isn't too significant over the years.

3. Performance by Product Sub Category:-

Overall Performance by Product Sub-category (2011 — 2012).

```
SELECT year(order_date) as years, product_sub_category, sum(sales) as sales  
FROM dqlab_sales_store  
WHERE (year(order_date) between 2011 and 2012) and order_status = 'Order  
Finished' GROUP BY year(order_date), product_sub_category ORDER BY years asc,  
sales desc LIMIT 5
```

console(output)::

years	product_sub_category	sales
2011	Chairs & Chairmats	622962720
2011	Office Machines	545856280
2011	Tables	505875008
2011	Copiers and Fax	404074080
2011	Telephones and Communication	392194658

The majority of sales growth is driven by increases, as evidenced by a positive figure. However, several sub-category products experienced a decrease in sales from 2011 to 2012, as seen by a negative figure. The categories with the largest sales declines were labels, copiers and fax machines, and tables.

3. Promotion Effectiveness and Efficiency by Years:-

Promotion Effectiveness and Efficiency by Years & Calculate the burn rate of the promotion performed by overalls based on the year.

```
SELECT
    year(order_date) as years,
    sum(sales) as sales,
    sum(discount_value) as promotion_value,
    round(sum(discount_value)/sum(sales)*100,2) as burn_rate_percentage
FROM dqlab_sales_store
WHERE order_status = 'Order Finished'
GROUP BY year (order_date)
```

console(output)::

years	sales	promotion_value	burn_rate_percentage
2009	4613872681	214330327	4.65
2010	4059100607	197506939	4.87
2011	4112036186	214611556	5.22
2012	4482983158	225867642	5.04

Burn rate analysis is used to knowing the effectiveness and efficiency of promotions. It does by comparing the sum of promotion value with total sales. Here DQLab hopes that the burn rate doesn't exceed 4.5%.

4: Promotion Effectiveness and Efficiency by Product Sub-Category.

Promotion Effectiveness and Efficiency by Product Sub Category Calculate the burn rate of the promotion performed by overalls based on sub-category.

```
SELECT
    year(order_date) as years,
    product_sub_category,
    product_category,
    sum(sales) as sales,
    sum(discount_value) as promotion_value,
    round(sum(discount_value)/sum(sales)*100,2) as burn_rate_percentage
FROM dqlab_sales_store
GROUP BY year (order_date), product_sub_category, product_category
ORDER BY Sales DESC
```

console(output)::

years	product_sub_category	product_category	sales
promotion_value	burn_rate_percentage		
2012	Office Machines	Technology	811427140
46616695	5.75		
2012	Chairs & Chairmats	Furniture	654168740
26623882	4.07		
2012	Telephones and Communication	Technology	422287514
18800188	4.45		
2012	Tables	Furniture	388993784
16348689	4.20		
2012	Binders and Binder Accessories	Office Supplies	363879200
22338980	6.14		
2012	Storage & Organization	Office Supplies	356714140
18802166	5.27		
2012	Computer Peripherals	Technology	308014340
15333293	4.98		
2012	Copiers and Fax	Technology	292489800
14530870	4.97		
2012	Appliances	Office Supplies	266131100
14393300	5.41		
2012	Office Furnishings	Furniture	178927480
8233849	4.60		
2012	Bookcases	Furniture	159984680

	10024365	6.27	
2012	Paper		Office Supplies 126896160
	6224694	4.91	
2012	Envelopes		Office Supplies 58629280
	2334321	3.98	
2012	Pens & Art Supplies		Office Supplies 43818480
	2343501	5.35	
2012	Scissors, Rulers and Trimmers		Office Supplies 36776400
	2349280	6.39	
2012	Labels		Office Supplies 10007040
2012	Rubber Bands		Office Supplies 3837880
	117324	3.06	
+-----+-----+-----+-----+			
+-----+-----+			

Only five sub-categories of products have a burn rate of less than 4.5 percent. It can be seen on the first five rows that they start with Rubber Bands and work their way up to Telephones and Communication. The Labels, on the other hand, are 0.02 percent greater than the maximum value of DQLab Store's projected burn rate.

It's fascinating since these findings reveal that there are still many product sub-categories with burn rates higher than 4.5 percent.

5: Customer Transactions per Year.

The calculation of customers number for each year doesn't entail the duplicate value. As a result, the DISTINCT operator is utilized in this query to obtain the unique value of the customer number.

```
SELECT YEAR(order_date) years,
       COUNT(DISTINCT customer) 'number of customer'
FROM dqlab_sales_store
WHERE order_status = 'Order Finished'
GROUP BY 1;
```

console(output)::

	years	Number of Customers	
	2009	585	
	2010	593	
	2011	581	
	2012	594	

Overall, the number of clients does not change considerably. However, we did not experience a major drop in customers. We can see that the number of consumers is typically between 580 and 590.

6: New Customer over the years.

```
SELECT YEAR(first_order) years,  
       COUNT(customer) 'new customers'  
FROM(  
    SELECT customer,  
           MIN(order_date) first_order  
    FROM dqlab_sales_store  
    WHERE order_status = 'Order Finished'  
    GROUP BY 1) first  
GROUP BY 1;
```

We simply need the data from each customer's initial transaction to calculate the number of new customers for each year. We can retrieve it by using the MIN() function on the first order field and then figuring out how many customers there are.

Output:-

console(output)::

years	Number of Customers
2009	585
2010	141
2011	38
2012	11

Each year, the number of new clients becomes less. It reaches an all-time high in 2012, with only 11 new customers. However, if we go back to the previous result (fig.7), the total number of clients tends to stay the same. This indicates that many prior customers are still returning to DQLab Store to complete transactions, despite the fact that the number of new consumers is declining.

Summary:-

Summary Based on our data analysis, we can deduce the following:

1: DQLab Store's total sales and order number have changed over time, with the biggest total sales being in 2009. Meanwhile, with the exception of 2011, the number of orders climbed, though the increase was not large.

2: Overall, total sales depending on sub-category of products increased from 2011 and 2012. However, sales of some of them are declining, such as appliances, bookcases, tables, labels, copiers, and fax machines.

3: Over the course of the year, the burn rate has remained over 4.5 percent. This shows that promotions haven't been as effective or efficient as DQLab Store had hoped.

4: Many products have a burn rate of more than 4.5 percent. This results in an annual burn rate of more than 4.5 percent. Rubber Bands, Envelopes, Chairs & Chairmats, Tables, and Telephones & Communication are the only products with a burn rate below 4.5 percent.

5: The number of consumers has remained consistent over time, hovering at 580–590.

6: The number of new clients has been declining over time, with the lowest number being 11 in 2012.