



## FINANCIAL ANALYSIS AND BUSINESS IMPACT-

#### **Risk Assessment & Credit Monitoring**

Identifies high-risk clients with high debt utilization & delinquent accounts. Helps banks and credit institutions reduce default risk through early intervention.

#### **Customer Insights & Retention**

Tracks churn indicators (inactive customers) for targeted re-engagement strategies.

Highlights top clients by transactions for premium loyalty programs.

#### **Profitability & Growth Tracking**

MoM & WoW growth metrics enable real-time monitoring of transaction trends.

Evaluates interest earned vs revolving balance to optimize revenue streams.

#### **Operational Efficiency**

Customer Acquisition Cost (CAC) provides cost-effectiveness of marketing campaigns.

Enables data-driven loan approval decisions based on credit limit analysis.

### INTRODUCTION:-



- -To calculate and analyze financial metrics such as running totals, moving averages, and growth rates for credit card usage.
- -To assess key performance indicators (KPIs) related to customer behavior, credit utilization, and delinquency risk.
- -To generate actionable insights for improving customer retention and enhancing financial performance.

#### Scope:

- -Analyzing credit card transaction data and financial metrics.
- -Creating dynamic reports and dashboards in Power BI.
- -Calculating KPIs related to customer behavior, utilization rates, and delinquency risk.
- -Providing insights for strategic decision-making to improve financial outcomes.

#### Tools:

**Power BI**: For data visualization and dashboard creation.

**DAX (Data Analysis Expressions):** For advanced calculations and metrics.

**Excel/SQL**: For data preprocessing and initial analysis if needed.





## Write DAX formulas for the following:

- 1. Running total of credit card transactions.
- 2. Calculate the 4-week moving average of the credit Limit for each client.
- 3. Calculate the MOM% growth and WOW% growth on transaction amount.
- 4. Calculate customer acquisition cost (CAC) as a ratio of transaction amount.
- 5. Calculate the yearly average of avg\_utilization\_ratio for all clients.
- 6. Calculate the percentage of Interest\_Earned compared to Total\_Revolving\_Bal for each client.
- 7. Calculate Top 5 Clients by Total Transaction Amount.
- 8. Identify clients whose Avg\_Utilization\_Ratio exceeds 80%.
- 9. Customer Churn Indicator: Create a KPI that flags clients who have not made any transactions (Total\_Trans\_Amt = 0) in the last 6 months.



## Write DAX formulas for the following:

- 10. Delinquency Rate: Calculate the percentage of clients with Delinquent\_Acc > 0.
- 11. Credit Risk Score: Create a score for each client based on their Avg\_Utilization\_Ratio, delinquent\_Acc, and Total\_Revolving\_Bal.
- 12. Income vs Credit Limit Correlation: Show the correlation between Income and credit\_Limit for all clients.
- 13. Average Customer Satisfaction Score by Credit Card Category: Calculate the average Cust\_Satisfaction\_Score by Card\_Category.
- 14. Loan Approval vs Credit Limit: Analyze how Credit\_Limit affects Personal\_loan approval by calculating the average credit limit for clients with and without loans.
- 15. High Risk Clients Flag: Create a flag for clients whose Total\_Revolving\_Bal exceeds 90% of their Credit\_Limit and who have a high Avg\_Utilization\_Ratio.

## 1. Running total of credit card transactions.



```
RUNNING_TOTAL =

CALCULATE(

SUM('credit_card and cc_add'[Total_Trans_Amt]),

FILTER(

ALLSELECTED('credit_card and cc_add'[Week_Start_Date]), 'credit_card and cc_add'[Week_Start_Date] <= MAX('credit_card and cc_add' [Week_Start_Date]))

[Week_Start_Date]))

Output

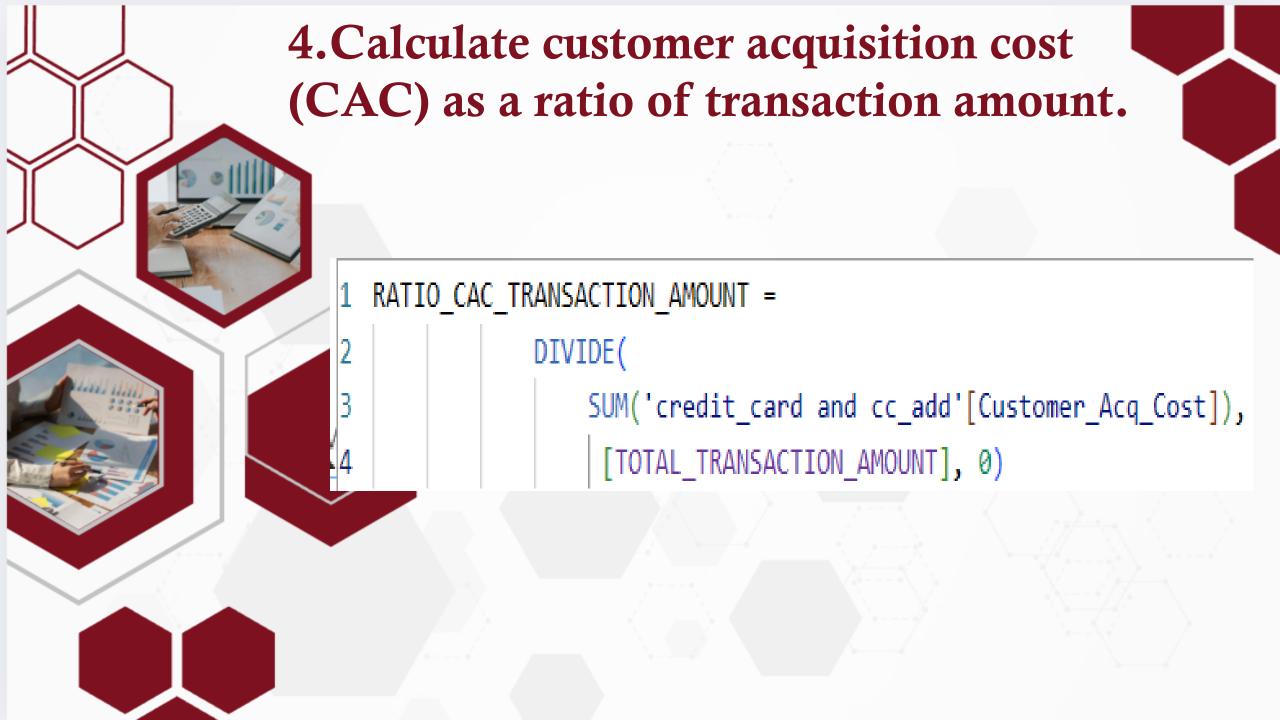
Description:
```

2. Calculate the 4-week moving average of the credit Limit for each client.



# 3. Calculate the MOM% growth and WOW% growth on transaction amount.

```
MOM growth =
VAR PREV_MONTH = CALCULATE(SUM('credit_card and cc_add'[Total_Trans_Amt]),
DATEADD(CALENDER[Date], -1, MONTH)
RETURN DIVIDE(SUM('credit_card and cc_add'[Total_Trans_Amt])-PREV_MONTH,PREV_MONTH,0
 WOW GROWTH =
    VAR PREV WEEK = CALCULATE(
    [TOTAL TRANSACTION AMOUNT],
         DATEADD(CALENDER[Date], -7,DAY))
    RETURN DIVIDE([TOTAL_TRANSACTION_AMOUNT]-PREV_WEEK, PREV_WEEK, 0)
```



## 5. Calculate the yearly average of avg\_utilization\_ratio for all clients.



```
1 AVG_UTILIZATION_RATIO =
```

L

AVERAGE('credit\_card and cc\_add'[Avg\_Utilization\_Ratio])

6. Calculate the percentage of Interest\_Earned compared to Total\_Revolving\_Bal for each client.



## 7. Calculate Top 5 Clients by Total Transaction Amount.

Create a new table using the following DAX....



```
TOP_5_CLIENTS =

TOPN(5, SUMMARIZE('credit_card and cc_add','credit_card and cc_add'[Client_Num], "TOTAL_AMOUNT", [TOTAL_TRANSACTION_AMOUNT]),

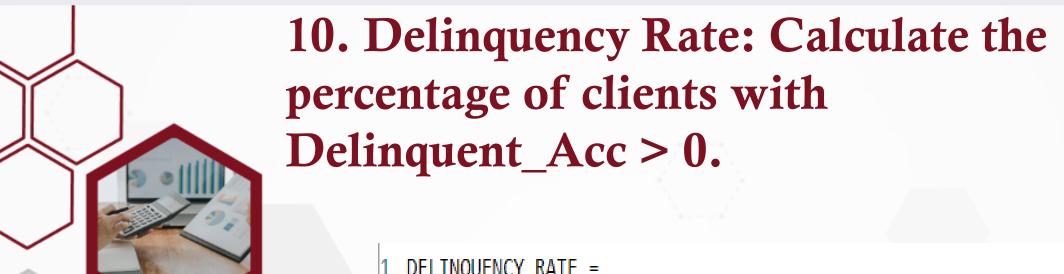
TOTAL_AMOUNT], DESC)
```



8.Identify clients whose Avg\_Utilization\_Ratio exceeds 80%.

```
1 CHECK_AUC_EXCEEDS_80 =
2 | IF([AVG_UTILIZATION_RATIO] > 0.80,
3 | TRUE,
4 | FALSE
5 | )
```

9. Customer Churn Indicator: Create a KPI that flags clients who have not made any transactions (Total\_Trans\_Amt = 0) in the last 6 months.



```
DELINQUENCY_RATE =

VAR GREATERTHAN_ZERO = CALCULATE(COUNTROWS('credit_card and cc_add'),

VAR GREATERTHAN_ZERO = CALCULATE(COUNTROWS('credit_card and cc_add'[Delinquent_Acc] > 0)

VAR TOTAL_ROWS = COUNTROWS('credit_card and cc_add')

RETURN DIVIDE(GREATERTHAN_ZERO, TOTAL_ROWS, 0)
```

11. Credit Risk Score: Create a score for each client based on their Avg\_Utilization\_Ratio, delinquent\_Acc, and Total\_Revolving\_Bal.

```
NORMALISED_REVOLVING_BALANCE =

DIVIDE('credit_card and cc_add'[Total_Revolving_Bal] -

MIN('credit_card and cc_add'[Total_Revolving_Bal]),

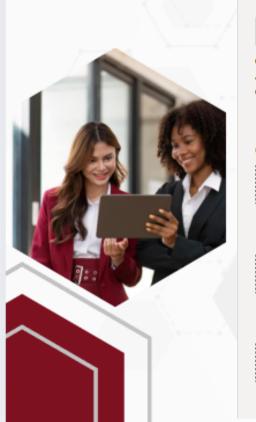
MAX('credit_card and cc_add'[Total_Revolving_Bal]) -

MIN('credit_card and cc_add'[Total_Revolving_Bal]) , 0)
```

```
Create two new
 columns in
 Credit table
```

```
1 CREDIT_RISK_STORE =
2 'credit_card and cc_add'[Avg_Utilization_Ratio] * 0.5 +
3 'credit_card and cc_add'[NORMALISED_REVOLVING_BALANCE] * 0.3 +
4 'credit_card and cc_add'[Delinquent_Acc] * 0.2
```

12. Income vs Credit Limit Correlation: Show the correlation between Income and credit\_Limit for all clients.



Quick measure Copilot can help Get measure suggestions in DAX query view. Try it now [7] Select a calculation to create a measure. Correlation coefficient Calculate the correlation coefficient between two values over a category. Originally suggested by Daniil Maslyuk in the quick measures gallery. Learn more Category ① Client Num Measure X ① Sum of Income Measure Y ① Sum of Credit\_Limit

In this analysis, we used
Quick Measures to calculate
the correlation between
various metrics. Specifically

Category: Client\_Num

Measure X: Income

**Measure Y**: Credit\_Limit

13. Average Customer Satisfaction Score by Credit Card Category: Calculate the average Cust\_Satisfaction\_Score by Card\_Category.

```
AVG_SATIFACTION_SCORE =

SUMMARIZE('credit_card and cc_add','credit_card and cc_add'[Card_Category],

"AVG_SATIFACTION_SCORE", AVERAGE('customer and customer_add'[Cust_Satisfaction_Score])

AUG_SATIFACTION_SCORE", AVERAGE('customer and customer_add'[Cust_Satisfaction_Score])
```

Card_Category ▼	AVG_SATIFACTION_SCORE
Blue	3.19927536231884
Silver	3.22187981510015
Gold	3.04663212435233
Platinum	2.71641791044776



14. Loan Approval vs Credit Limit: Analyze how Credit\_Limit affects Personal\_loan approval by calculating the average credit limit for clients with and without loans.

```
1 LOAN_APPROVAL_NO =
2 CALCULATE(AVERAGE('credit_card and cc_add'[Credit_Limit]),
3 | 'customer and customer_add'[Personal_loan] = "NO")
4
5
```

```
1 LOAN_APPROVAL_YES =
2 CALCULATE(AVERAGE('credit_card and cc_add'[Credit_Limit]),
3 'customer and customer_add'[Personal_loan] = "YES")
```



15. High Risk Clients Flag: Create a flag for clients whose Total\_Revolving\_Bal exceeds 90% of their Credit\_Limit and who have a high Avg\_Utilization\_Ratio.

Create two new column in Credit table

