

# **Financial Analysis Project**

**By applying DAX functions**

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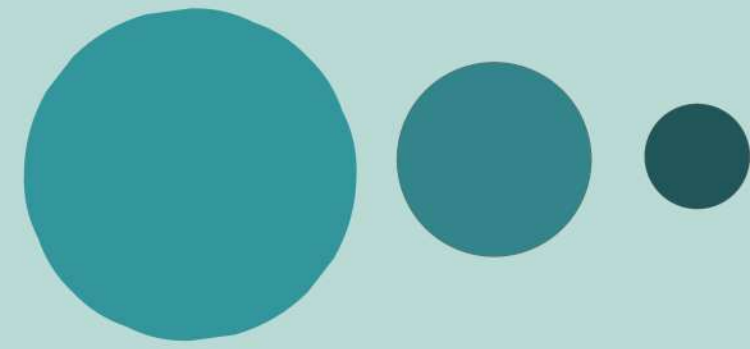
# Introduction

Financial analysis is the process of evaluating businesses, projects, budgets, and other finance-related transactions to determine their performance and suitability. Typically, financial analysis is used to analyze whether an entity is stable, solvent, liquid, or profitable enough to warrant a monetary investment.





# Running total of credit card transactions.



```
Running Total =  
CALCULATE([Total Transaction Amount], FILTER(ALL  
( 'Credit Card' ), 'Credit Card'[Week_Start_Date]  
<= MAX('Credit Card'[Week_Start_Date]))))
```

The formula calculates the total transaction amount for each week, cumulatively adding up the amounts from previous weeks.

# Calculate the 4-week moving average of the CreditLimit for each client.

```
Moving_average_4_weeks =  
  
VAR weeks4 = DATESINPERIOD('calander'[Date],MAX('calander'[Date]),-28,  
DAY)  
  
VAR total_amount = CALCULATE([Total Transsaction Amount],weeks4)  
  
VAR num_of_weeks = CALCULATE(DISTINCTCOUNT('calander'[week_num]),weeks4)  
  
RETURN DIVIDE(total amount,num of weeks,0)
```

This formula effectively calculates the 4-week moving average of credit card transactions for each client.



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

## MOM% Growth

```
MOM%growth =  
VAR perv_month = CALCULATE([Total Transaction Amount],  
DATEADD('calander'[Date],-1,month))  
  
RETURN DIVIDE([Total Transaction Amount]-perv_month,  
perv month,0)
```

## WOW% Growth

```
WOW%growth =  
VAR prev_week = CALCULATE([Total Transaction  
Amount],DATEADD('calander'[Date],-7,DAY))  
  
RETURN DIVIDE([Total Transaction Amount]-prev_week,  
prev week,0)
```

Both formulas leverage the CALCULATE and DATEADD functions to compare the current period's transaction amount with the previous period's amount (month or week). The DIVIDE function then calculates the percentage growth. These formulas provide valuable insights into the trends of transaction amounts over time, helping to identify areas of growth or decline.



# Calculate customer acquisition cost (CAC) as a ratio of transaction amount.

```
RATIO_CAC_TRANSACTION_AMOUNT =  
DIVIDE(SUM('Credit Card'[Customer_Acq_Cost]),  
[Total Transsaction Amount],0)
```

This formula calculates the ratio of CAC to transaction amount. This ratio provides valuable insights into the cost of acquiring a customer relative to the revenue generated by that customer. A higher ratio indicates a higher cost of acquiring customers compared to the revenue they generate.

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

```
AVG_UTILIZATION_RATIO =  
  
AVERAGE('Credit Card'[Avg_Utilization_Ratio])
```

This formula provides a single value representing the average utilization ratio across all clients for the entire year. This metric can be useful for understanding the overall credit utilization behavior of clients and identifying potential risks associated with high credit utilization.



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

```
INTEREST_EARNED_BY_REVOL_BALANCE =  
DIVIDE(SUM('Credit Card'[Interest_Earned]),  
SUM('Credit Card'[Total Revolving Bal]))
```

This formula calculates the ratio of interest earned to the total revolving balance. In essence, it determines the percentage of interest earned on the outstanding revolving balance for each client.



# Calculate Top 5 Clients by Total Transaction Amount.

```
TOP_5_CLIENTS =  
TOPN(5,SUMMARIZE('Credit Card','Credit Card'  
[Client_Num],"total amount",[Total Transsaction  
Amount]),[total amount],DESC)
```

This formula identifies the top 5 clients based on their total transaction amounts. This information can be valuable for:

- Customer segmentation: Identifying high-value clients for targeted marketing campaigns and loyalty programs.
- Sales analysis: Understanding which clients contribute the most to overall revenue.
- Resource allocation: Directing sales and support efforts towards the most valuable clients.



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

```
CHECK_EXCEEDS_80 =  
IF([AVG_UTILIZATION_RATIO]> 0.80,True,False)
```

This formula creates a new column or measure that flags clients whose average utilization ratio is above 80%. This information can be used to:

- Identify high-risk clients: Clients with high utilization ratios are more likely to default on their credit obligations.



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

```
CHURN =  
VAR balance = CALCULATE([Total Transaction Amount],  
DATESINPERIOD('calander'[Date],MAX('calander'[Date]),  
-6,MONTH))  
  
RETURN IF(ISBLANK(balance),"Churned","Not Churned")
```

This formula effectively flags clients who have not made any transactions in the last 6 months.

By using this KPI, businesses can gain valuable insights into customer churn and take proactive steps to retain their customers.



# Calculate the percentage of clients with Delinquent\_Acc > 0.

```
DELINQUENCY_RATE =  
  
VAR GREATER_ZERO = CALCULATE(COUNTROWS('Credit Card'),  
    'Credit Card'[Delinquent_Acc] > 0)  
  
VAR total_rowws = COUNTROWS('Credit Card')  
RETURN DIVIDE(GREATER_ZERO, total_rowws, 0)
```

This formula calculates the percentage of clients who have a Delinquent\_Acc value greater than 0.

By monitoring the delinquency rate, businesses can proactively manage credit risk and take steps to improve their overall financial performance.



# Create a score for each client based on their Avg\_Utilization\_Ratio, delinquent\_Acc, and Total\_Revolving\_Bal.

```
NORMALIZED_REVOLVING_BALANCE =  
  
DIVIDE('Credit Card'[Total_Revolving_Bal]-min('Credit Card'  
[Total_Revolving_Bal]),  
  
max('Credit Card'[Total_Revolving_Bal])-min('Credit Card'  
[Total_Revolving_Bal]),0)
```

This approach creates a composite credit risk score that considers multiple factors. Higher scores indicate higher credit risk

```
CREDIT_RISK_SCORE =  
  
'Credit Card'[AVG_UTILIZATION_RATIO] * 0.5 +  
'Credit Card'[NORMALIZED_REVOLVING_BALANCE] * 0.3 +  
'Credit Card'[Delinquent_Acc] * 0.2
```



# Show the correlation between Income and credit\_Limit for all clients.

The screenshot shows the 'Quick measure' pane in Power BI. The 'Calculations' tab is selected, and the 'Correlation coefficient' measure is chosen. The description states: 'Calculate the correlation coefficient between two values over a category. Originally suggested by Daniil Maslyuk in the quick measures gallery. [Learn more](#)'. The configuration is as follows:

- Category:** Client\_Num
- Measure X:** Income
- Measure Y:** Credit\_Limit

An 'Add' button is at the bottom right of the configuration area. To the right, the 'Data' pane shows a list of fields, with 'Income and Credit\_Limit corr.' highlighted.

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

This approach help us to find correlation coefficient, which measures the strength and direction of the linear relationship between Income and Credit Limit.



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

```
AVG_SATISFACTION_SCORE =  
SUMMARIZE('Credit Card','Credit Card'[Card_Category],  
"AVG_SATISFACTION_SCORE",AVERAGE(Customers  
[Cust_Satisfaction_Score]))
```

This formula calculates the average customer satisfaction score for each credit card category.

This would indicate that customers are most satisfied with the Rewards card category, followed by Debit and then Credit cards.



# Analyze how Credit\_Limit affects Personal\_loan approval by calculating the average credit limit for clients with and without loans.

```
LOAN_APPROVAL_NO =  
CALCULATE(AVERAGE('Credit Card'[Credit_Limit]),  
Customers[Personal_loan] = "NO")
```

```
LOAN_APPROVAL_YES =  
CALCULATE(AVERAGE('Credit Card'[Credit_Limit]),  
Customers[Personal_loan] = "YES")
```

By comparing the values of LOAN\_APPROVAL\_NO and LOAN\_APPROVAL\_YES, we can gain insights into how Credit Limit might influence Personal Loan approval



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

```
FLAG_CLIENTS =  
IF('Credit Card'[NORMALIZED_REVOLVING_BALANCE] > 0.9 &&  
[Avg_Utilization_Ratio] > 0.8,"FLAGGED","NOT FLAGGED")
```

Identifies High-Risk Clients: This formula flags clients who are likely to be at high risk of default or financial distress.



# Thank You

