FINANCIAL ANALYSIS PROJECT

Presented by : Ajay Malik

METRICS

- Running Total of Credit Card Transactions
- Calculate the 4-week moving average of the creditLimit for each client.
- Calculate the mom% growth and wow% growth on transaction amount.
- Calculate Customer Acquisition Cost (CAC) as a Ratio of Transaction Amount.
- Calculate the yearly average of avg_utilization_ratio for all clients.
- Calculate the percentage of Interest_Earned compared to Total_Revolving_Bal for each client.
- Calculate Top 5 Clients by Total Transaction Amount.
- Identify clients whose Avg_Utilization_Ratio exceeds 80%.
- 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: Calculate the percentage of clients with Delinquent_Acc > 0.
- Credit Risk Score: Create a score for each client based on their Avg_Utilization_Ratio, Delinquent_Acc, and Total_Revolving_Bal.
- Income vs Credit Limit Correlation: Show the correlation between Income and Credit_Limit for all clients.
- Average Customer Satisfaction Score by Credit Card Category: Calculate the average Cust_Satisfaction_Score by Card_Category.
- 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.
- 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.

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])))
```

CALCULATE THE 4-WEEK MOVING AVERAGE OF THE CREDITLIMIT FOR EACH CLIENT.

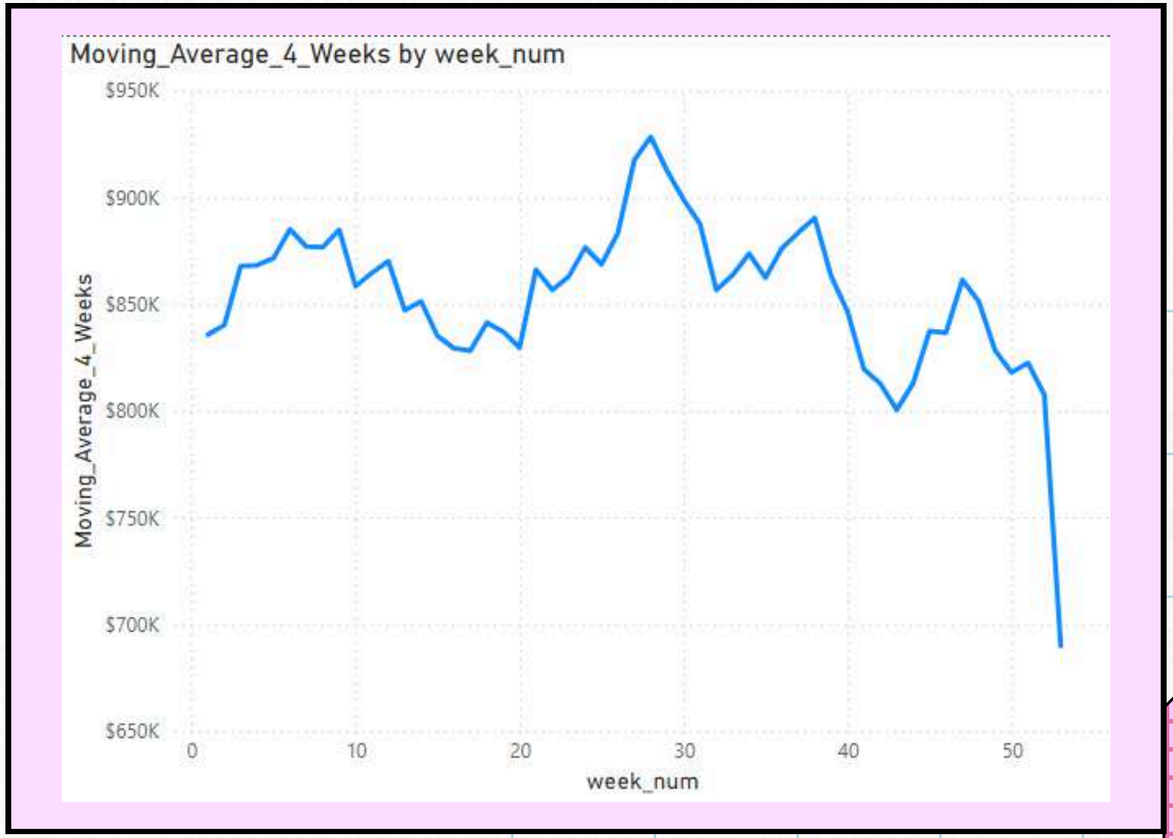
```
Moving_Average_4_Weeks =

var weeks_4 = DATESINPERIOD(Calender[Date], MAX(Calender[Date]), -28, DAY)

var total_amount = CALCULATE([Total_Transaction_Amount], weeks_4)

var num_of_weeks = CALCULATE(DISTINCTCOUNT(Calender[week_num]), weeks_4)

RETURN DIVIDE(total_amount, num_of_weeks, 0)
```



CALCULATE THE MOM% GROWTH AND WOW% GROWTH ON TRANSACTION AMOUNT.

1

```
mom%growth =

var prev_month =

CALCULATE([Total_Transaction_Amount],
DATEADD(Calender[Date], -1, MONTH))

RETURN DIVIDE(
    [Total_Transaction_Amount] - prev_month,
    prev_month, 0)
```

2

```
wow%growth =
var prev_week =
CALCULATE([Total_Transaction_Amount],
DATEADD(Calender[Date], -7, DAY))

RETURN DIVIDE(
    [Total_Transaction_Amount]
    - prev_week, prev_week, 0)
```

CALCULATE CUSTOMER ACQUISITION COST (CAC) AS A RATIO OF TRANSACTION AMOUNT.

```
ratio_cac_transaction_amount =

DIVIDE(SUM(credit_card[Customer_Acq_Cost]),

[Total_Transaction_Amount], 0)
```

Customer Acquisition Cost (CAC) is a key business metric that represents the cost of acquiring a new customer. It helps businesses understand how much they are spending to attract and convert each customer, providing insight into the efficiency and effectiveness of their marketing and sales strategies

CALCULATE THE YEARLY AVERAGE OF AVG_UTILIZATION_RATIO FOR ALL CLIENTS.

```
avg_utilization_ratio =

AVERAGE(credit_card[Avg_Utilization_Ratio])
```

The utilization ratio, often called the credit utilization ratio, is a key financial metric that measures how much of your available credit you're using compared to your total credit limit. It is commonly used in the context of credit cards and is a significant factor in determining your credit score.

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]), 0)
```

CALCULATE TOP 5 CLIENTS BY TOTAL TRANSACTION AMOUNT.

```
top_5_clients =
TOPN(5,SUMMARIZE(credit_card,credit_card[Client_Num],
 "total amount", [Total_Transaction_Amount]),
 [total amount],DESC)
```

IDENTIFY CLIENTS WHOSE AVG_UTILIZATION_RATIO EXCEEDS 80%.

```
check_exceeds_80 =
IF([avg_utilization_ratio] > 0.80, True, FALSE)
```

CUSTOMER CHURN INDICATOR: 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(Calender[Date],
MAX(Calender[Date]), -6, MONTH))

RETURN if (ISBLANK(balance),"Churned","Not Churned")
```

A Customer Churn Indicator is a metric or signal used to predict whether a customer is likely to stop doing business with a company or discontinue using its products or services. Churn occurs when customers leave, and understanding churn indicators helps organizations proactively address the reasons behind it, improving customer retention.

DELINQUENCY RATE: CALCULATE THE PERCENTAGE OF CLIENTS WITH DELINQUENT_ACC > 0.

```
Delinquency_Rate =
var greater_than_zero = CALCULATE(COUNTROWS(credit_card), credit_card
[Delinquent_Acc] > 0)

var total_rows = COUNTROWS(credit_card)

RETURN DIVIDE(greater_than_zero, total_rows, 0)
```

The Delinquency Rate is a financial metric that represents the percentage of loans or credit accounts that are past due on payments. It is commonly used by financial institutions, lenders, and analysts to assess the health of a loan portfolio, monitor credit risk, and evaluate the likelihood of defaults.

CREDIT RISK SCORE: CREATE A SCORE FOR EACH CLIENT BASED ON THEIR AVG_UTILIZATION_RATIO, DELINQUENT_ACC, AND TOTAL_REVOLVING_BAL.

```
credit_risk_score =

[Avg_Utilization_Ratio] * 0.5 +
credit_card[normalized_revolving_balance] * 0.3 +
credit_card[Delinquent_Acc] * 0.2
```

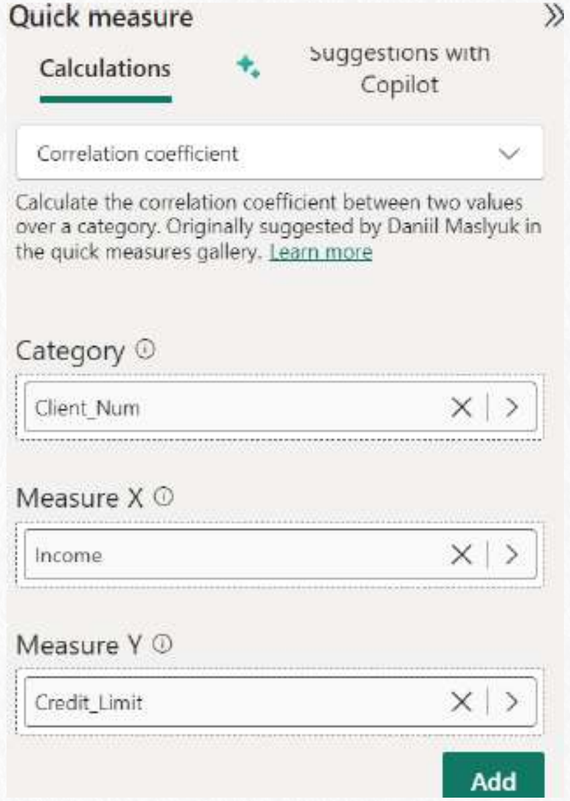
A credit risk score is a numerical representation of the likelihood that a borrower will repay their debt obligations on time. It is commonly used by financial institutions, lenders, and other entities to assess the creditworthiness of individuals or businesses.

PURPOSE OF A CREDIT RISK SCORE

- Risk Assessment: It helps lenders evaluate the potential risk of lending money or extending credit.
- Decision-Making: Guides decisions on loan approvals, interest rates, and credit limits.
- Predictive Tool: Indicates the probability of default based on historical financial behavior.

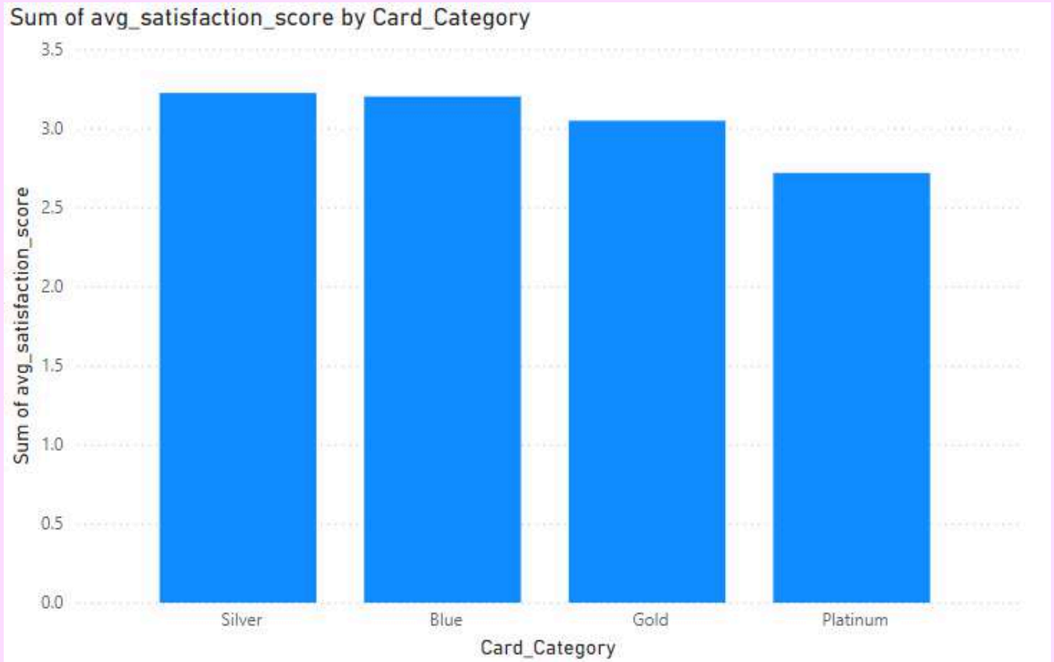
INCOME VS CREDIT LIMIT CORRELATION.

In this analysis, we utilized Quick Measures to calculate the correlation between different metrics.
Category: Client_Num
Measure X: Income
Measure Y: Credit_Limit
This setup allows us to evaluate the relationship between Income and Credit_Limit for each client.



AVERAGE CUSTOMER SATISFACTION SCORE BY CREDIT CARD CATEGORY

```
avg_satisfaction_score_by_card_category =
 SUMMARIZE(credit_card, credit_card[Card_Category],
  "avg_satisfaction_score",
  AVERAGE(customers[Cust_Satisfaction_Score]))
```



LOAN APPROVAL VS CREDIT LIMIT

- **LOAN_APPROVAL_YES**

```
loan_approval_yes =
CALCULATE(AVERAGE(credit_card[Credit_Limit]), customers[Personal_loan] = "Yes")
```

- **LOAN_APPROVAL_NO**

```
loan_approval_no = CALCULATE(AVERAGE(credit_card[Credit_Limit]), customers
[Personal_loan] = "No")
```

HIGH RISK CLIENTS FLAG

```
flag_clients =

if(credit_card[normalized_revolving_balance
 > 0.9 &&
[Avg_Utilization_Ratio] > 0.8,
 "Flagged", "Not Flagged")
```

Flagging high-risk clients is essential for financial institutions, lenders, and businesses because it helps manage and mitigate risks associated with lending, credit, and operations. Here's why it matters:

01. Flagging high-risk clients allows businesses to identify potential credit or financial risks early. This enables proactive measures to prevent.

02. Financial institutions are required to comply with regulations that mandate risk assessment and management.

03. Flagging high-risk clients doesn't always mean denying services; it can also be a way to offer tailored support.

CONCLUSION

A detailed overview of credit card usage and financial metrics is provided by the analysis, which offers insightful information about credit risk, customer behavior, and overall financial performance. The banking organization can improve outcomes, optimize credit management, and increase customer retention by using these insights to inform its decisions. Better strategic planning and decision-making were made possible by the use of Power BI and DAX functions, which allowed for in-depth analysis and visualization.

THANK YOU

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