Banking Dashboard

Problem Statement –

Develop a fundamental knowledge of risk assessment techniques in the banking and financial sector and learn how information is utilized to reduce potential financial losses when providing loans to borrowers.

Solution –

Our interactive dashboards, built with the latest Power BI tools, enable the company to make informed lending decisions by analyzing the applicant's profile—approving loans for those likely to repay and rejecting high-risk applicants.

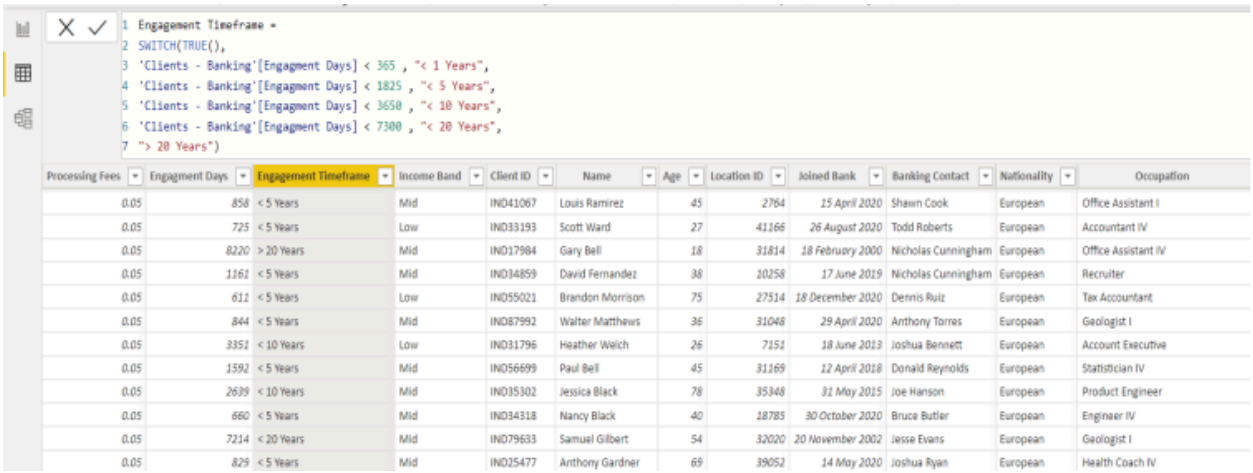
About Dataset –

This dataset basically contains information about bank details ,various client details which consists of multiple tables which are interlinked with each other through keys like primary key and foreign key.

The various tables are Banking Relationship, Client-Banking, Gender, Investment Advisor and Period.

Data Cleaning –

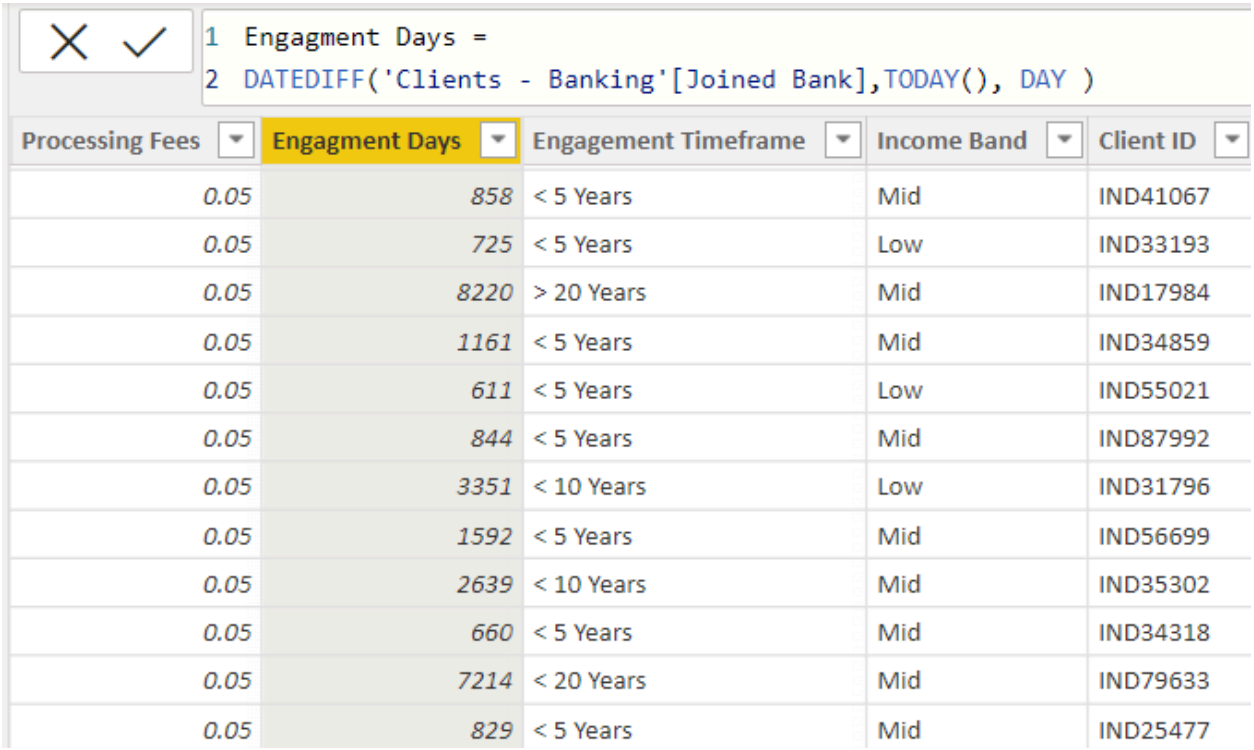
Creating a new column Engagement Timeframe in client-banking column which tells about the time line of the clients in banks



```
Engagement Timeframe =
SWITCH(TRUE(),
'Clients - Banking'[Engagment Days] < 365 , "< 1 Years",
'Clients - Banking'[Engagment Days] < 1825 , "< 5 Years",
'Clients - Banking'[Engagment Days] < 3650 , "< 10 Years",
'Clients - Banking'[Engagment Days] < 7300 , "< 20 Years",
"> 20 Years")
```

Processing Fees	Engagment Days	Engagement Timeframe	Income Band	Client ID	Name	Age	Location ID	Joined Bank	Banking Contact	Nationality	Occupation
0.05	858	< 5 Years	Mid	IND41067	Louis Ramirez	45	2764	15 April 2020	Shawn Cook	European	Office Assistant I
0.05	725	< 5 Years	Low	IND33193	Scott Ward	27	41166	26 August 2020	Todd Roberts	European	Accountant IV
0.05	8220	> 20 Years	Mid	IND17984	Gary Bell	18	31814	18 February 2000	Nicholas Cunningham	European	Office Assistant IV
0.05	1161	< 5 Years	Mid	IND34859	David Fernandez	38	10258	17 June 2019	Nicholas Cunningham	European	Recruiter
0.05	611	< 5 Years	Low	IND55021	Brandon Morrison	75	27514	18 December 2020	Dennis Ruiz	European	Tax Accountant
0.05	844	< 5 Years	Mid	IND87992	Walter Matthews	36	31048	29 April 2020	Anthony Torres	European	Geologist I
0.05	3351	< 10 Years	Low	IND31796	Heather Welch	26	7151	18 June 2013	Joshua Bennett	European	Account Executive
0.05	1592	< 5 Years	Mid	IND56699	Paul Bell	45	31169	12 April 2018	Donald Reynolds	European	Statistician IV
0.05	2639	< 10 Years	Mid	IND35302	Jessica Black	78	35348	31 May 2015	Joe Hanson	European	Product Engineer
0.05	660	< 5 Years	Mid	IND34318	Nancy Black	40	18785	30 October 2020	Bruce Butler	European	Engineer IV
0.05	7214	< 20 Years	Mid	IND79633	Samuel Gilbert	54	32020	20 November 2002	Jesse Evans	European	Geologist I
0.05	829	< 5 Years	Mid	IND25477	Anthony Gardner	69	39052	14 May 2020	Joshua Ryan	European	Health Coach IV

Creating a new column Engagment Days in Client-Banking table how many days the client spent from the date of joining in banks



```
Engagment Days =
DATEDIFF('Clients - Banking'[Joined Bank],TODAY(), DAY )
```

Processing Fees	Engagment Days	Engagement Timeframe	Income Band	Client ID
0.05	858	< 5 Years	Mid	IND41067
0.05	725	< 5 Years	Low	IND33193
0.05	8220	> 20 Years	Mid	IND17984
0.05	1161	< 5 Years	Mid	IND34859
0.05	611	< 5 Years	Low	IND55021
0.05	844	< 5 Years	Mid	IND87992
0.05	3351	< 10 Years	Low	IND31796
0.05	1592	< 5 Years	Mid	IND56699
0.05	2639	< 10 Years	Mid	IND35302
0.05	660	< 5 Years	Mid	IND34318
0.05	7214	< 20 Years	Mid	IND79633
0.05	829	< 5 Years	Mid	IND25477

Creating bins for the Estimated Income < 100000 as low and <300000 as Mid with the column named as Income Band in Clients-Banking table.

```
1  Income Band =
2  SWITCH(TRUE(),
3  'Clients - Banking'[Estimated Income] < 100000,"Low",
4  'Clients - Banking'[Estimated Income] < 300000,"Mid",
5  "High" )
```

Processing Fees	Engagment Days	Engagement Timeframe	Income Band	Client ID
0.05	2425	< 10 Years	Mid	IND16101
0.05	5966	< 20 Years	Low	IND26283
0.05	1522	< 5 Years	Mid	IND97689
0.05	1669	< 5 Years	High	IND88778
0.05	4100	< 20 Years	Low	IND92423
0.05	7884	> 20 Years	Mid	IND38441
0.05	1610	< 5 Years	Mid	IND79955
0.05	858	< 5 Years	Mid	IND41067
0.05	725	< 5 Years	Low	IND33193
0.05	8220	> 20 Years	Mid	IND17984
0.05	1161	< 5 Years	Mid	IND34859
0.05	611	< 5 Years	Low	IND55021
0.05	844	< 5 Years	Mid	IND87992
0.05	3351	< 10 Years	Low	IND31796
0.05	1592	< 5 Years	Mid	IND56699
0.05	2639	< 10 Years	Mid	IND35302
0.05	660	< 5 Years	Mid	IND34318

Creating a new column named as Processing Fees for the column Fee Structure like if fee structure is high then processing fee would be 0.05

```
1 Processing Fees =
2 SWITCH('Clients - Banking'[Fee Structure],
3 "High",0.05,
4 "Mid" ,0.03,
5 "Low" , 0.01 , 0
6 )
```

Processing Fees	Engagment Days	Engagement Timeframe	Income Band
0.05	2425	< 10 Years	Mid
0.05	5966	< 20 Years	Low
0.05	1522	< 5 Years	Mid
0.05	1669	< 5 Years	High
0.05	4100	< 20 Years	Low
0.05	7884	> 20 Years	Mid
0.05	1610	< 5 Years	Mid
0.05	858	< 5 Years	Mid
0.05	725	< 5 Years	Low
0.05	8220	> 20 Years	Mid
0.05	1161	< 5 Years	Mid
0.05	611	< 5 Years	Low

Calculated Functions –

Sum :

The power bi sum function will add all the numbers in a column and the column contains numbers to sum. It returns a decimal number.

Syntax :

Sum= SUM(<column>)

Example:

Bank Deposit =

SUM('Clients - Banking'[Bank Deposits])

DistinctCount :

Counts the number of distinct values in a column

Syntax:

DISTINCTCOUNT(<column>)

Example :

Total Clients = DISTINCTCOUNT('Clients - Banking'[Client ID])

Sumx :

Returns the sum of an expression evaluated for each row in a table.

Syntax:

SUMX(<table>, <expression>)

Example :

Total Fees = SUMX('Clients - Banking' , [Total Loan] * 'Clients - Banking'[Processing Fees])

Switch :

Evaluated an expression against a list of values and returns one of multiple possible result expressions

Syntax :

SWITCH(<expression>, <value>, <result>[, <value>, <result>]…[, <else>])

DATEDIFF :

Returns the number of interval boundaries between two dates.

Syntax :

DATEDIFF(<Date1>, <Date2>, <Interval>)

Example :

Engagment Days = DATEDIFF('Clients - Banking'[Joined Bank],TODAY(), DAY)

KPI'S:

In which followings KPIS are present :

Total Clients :

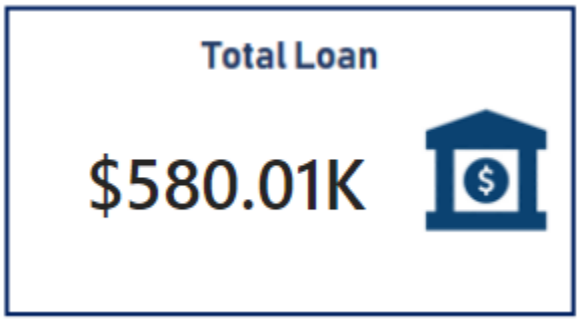
Total Clients KPI represents total number of clients in banking.

Total Clients = DISTINCTCOUNT('Clients - Banking'[Client ID])

Total Loan :

Total Loan gives you information about the bank loan + Business lending + credit cards balance of particular investor , gender.

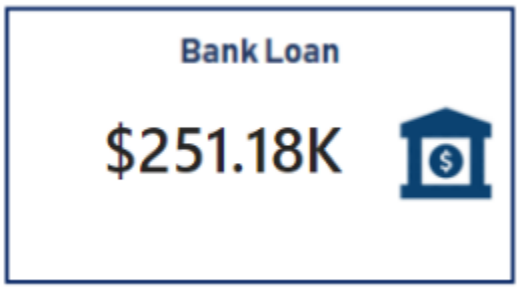
Total Loan = [Bank Loan] + [Business Lending] + [Credit Cards Balance]



Bank Loan :

Bank Loan gives you information what is the loan amount of loan to be repaid by the client to bank.

Bank Loan = SUM('Clients - Banking'[Bank Loans])



Business Lending :

Business lending gives you information about the loan amount given to small business.

Business Lending = SUM('Clients - Banking'[Business Lending])

Total Deposit

Total Deposit gives you information about the amount deposited by particular investors in bank

Total Deposit = [Bank Deposit] + [Savings Account] + [Foreign Currency Account] + [Checking Accounts]

Total Fees :

Total Fees is nothing but the amount charged by the bank for account set-up , maintenance charges etc.

Total Fees = SUMX('Clients - Banking' , [Total Loan] * 'Clients - Banking'[Processing Fees])

Bank Deposit :

Bank deposit is the money put in the bank.

Bank Deposit =

SUM('Clients - Banking'[Bank Deposits])

Checking Account Amount :

Checking account amount is nothing but which offers easy access to your money for daily transactional needs.

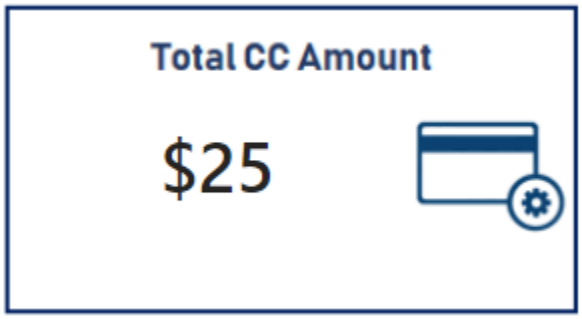
Checking Accounts =

SUM('Clients - Banking'[Checking Accounts])

Total CC Amount :

Total CC Amount is a short-term source of financing for a company by a bank.

```
Total CC Amount = SUM('Clients - Banking'[Amount of Credit Cards] )
```



Saving Account Amount :

A savings account is an interest-bearing deposit account held at a bank.

```
Savings Account = SUM('Clients - Banking'[Saving Accounts] )
```

Foreign Currency Amount :

Foreign Currency Account means an account held in a currency that is not the currency of India or Bhutan or Nepal.

Foreign Currency Account =

SUM('Clients - Banking'[Foreign Currency Account])

Engagement Account :

Engagement Banking is nothing but puts the customer at the center and aims to deliver the digital experiences they expect.

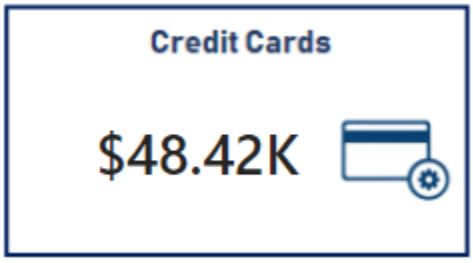
Engagment Length =

SUM('Clients - Banking'[Engagment Days])

Credit Cards Balance :

It is the total amount of money currently owned by a cardholder to their credit card bank.

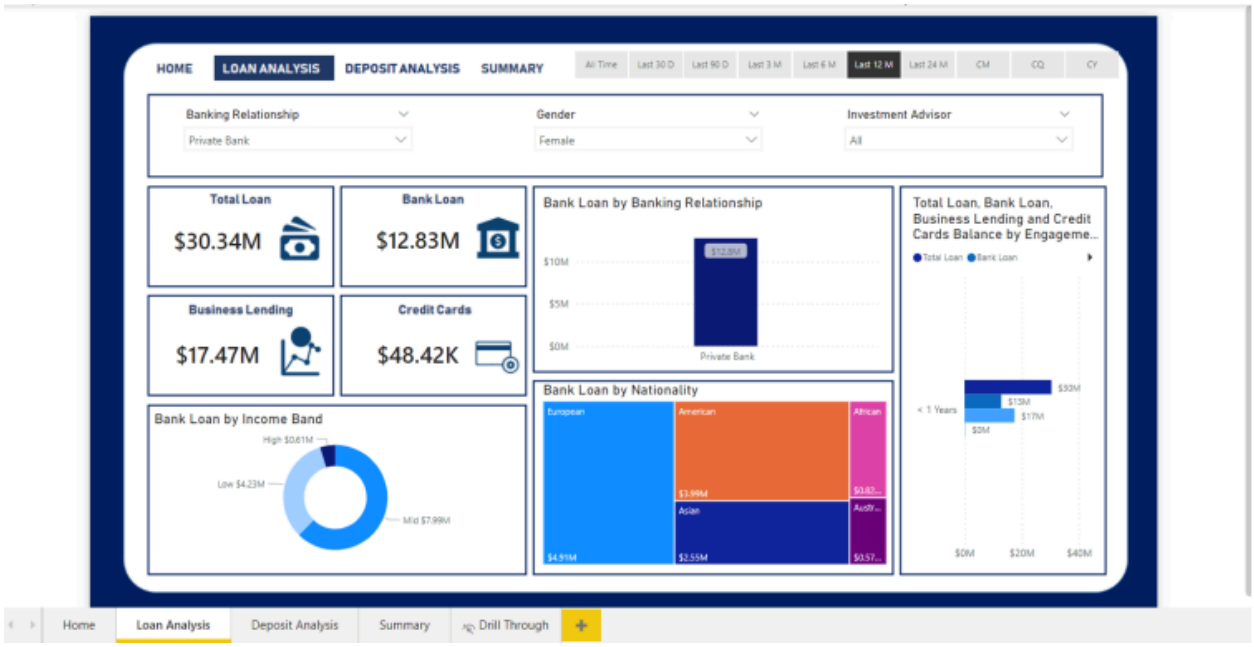
```
Credit Cards Balance = SUM('Clients - Banking'[Credit Card Balance] )
```



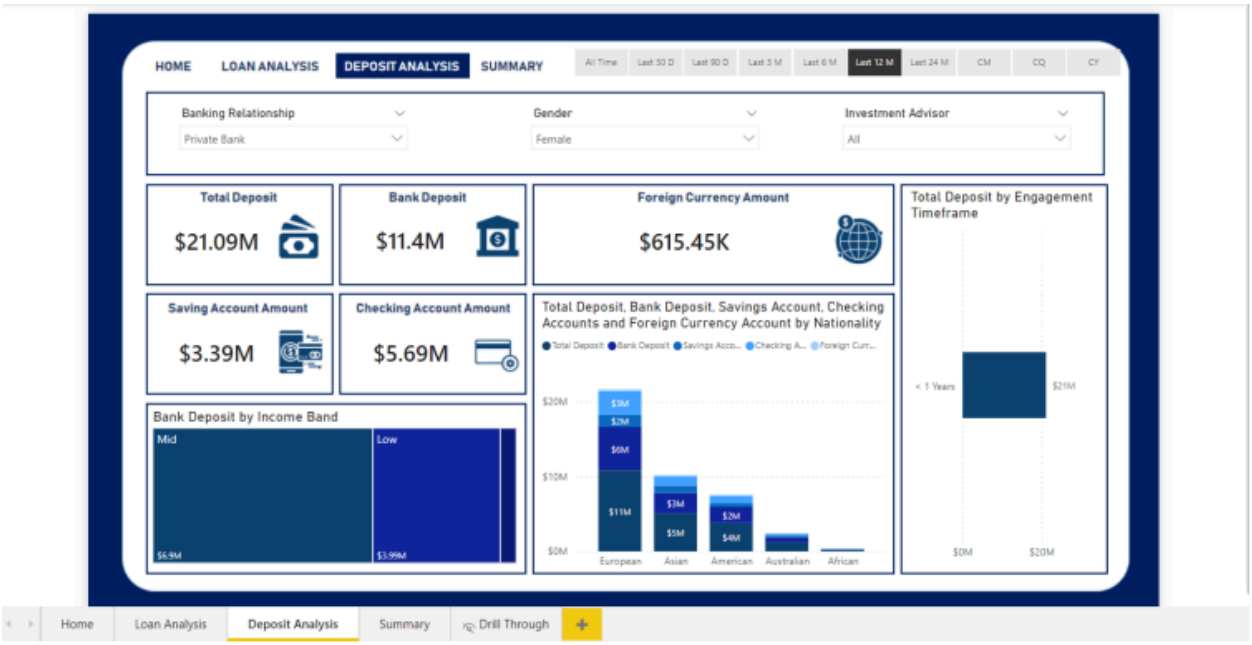
Visualization And Result –

Home

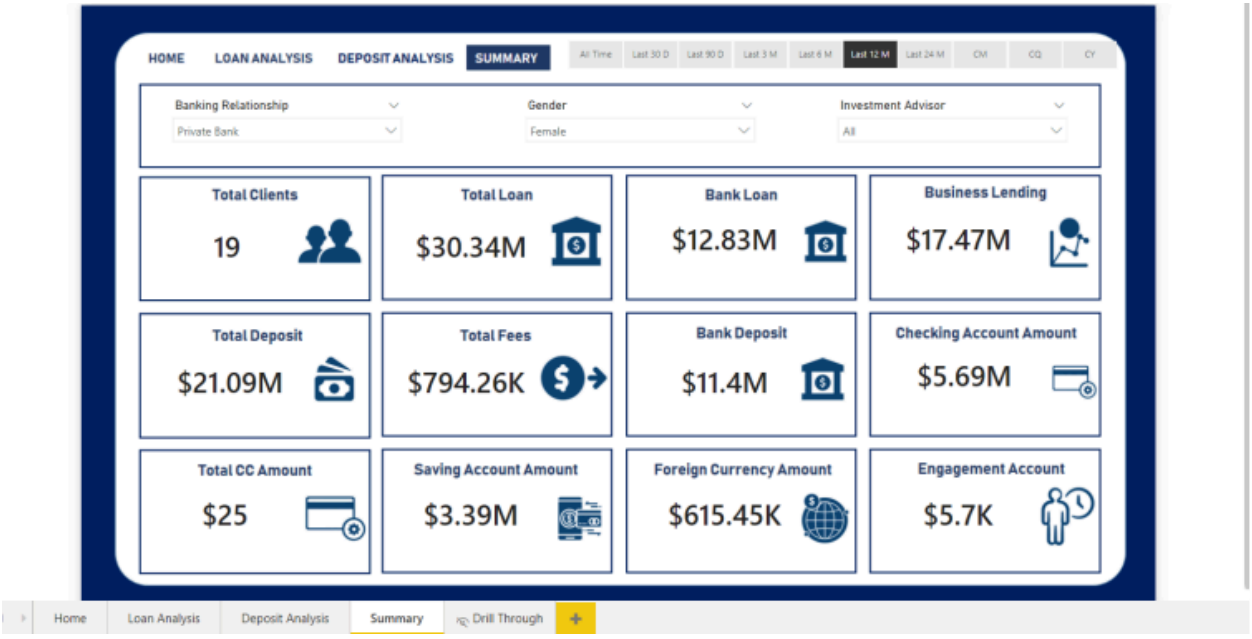
Loan Analysis



Deposit Analysis



Summary Dashboard



Conclusion –

Empowered by the latest data visualization techniques, Power BI dashboards are among the most effective resources for using in banking sector. As outlined in this write-up, a banking operations dashboard in Power BI can be developed with key banking related metrics and KPIs.

Future Work –

With these dashboards banks can easily know what is the total loan amount and all other things of a particular investor.

It also helps which type of banks have more number of clients as we can see private banks have more number of clients so it can helps other banks can build their strategies to increase clients.

It also provides insights about which nationality has highest bank loans.

It gives information about various types of amount involved in different types of accounts by investors.