

# TASK 5 VIX DATA ENGINEER

## BTPN SYARIAH

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# Case Study

A manager at a bank is concerned about the increasing number of customers who are leaving their credit card services. They would greatly appreciate it if someone could identify customer profiles so that they can determine which customers are likely to leave. This would allow them to proactively approach those customers, provide better service, and potentially change their decision to stay with the bank.



# Overview

## customer data history \*

CLIENTNUM
idstatus
Customer_Age
Gender
Dependent_count
Educationid
Maritalid
Income_Category
card_categoryid
Months_on_book
Total_Relationship_Count
Months_Inactive_12_mon
Contacts_Count_12_mon
Credit_Limit
Total_Revolving_Bal
Avg_Open_To_Buy
Total_Trans_Amt
Total_Trans_Ct
Avg_Utilization_Ratio

## category db \*

id
Card_Category

## status db \*

id
status

## marital db \*

id
Marital_Status

## education db \*

id
Education_Level

5 tables from database VIX BTPN :

- customer\_data\_history,
- status\_db,
- category\_db,
- education\_db,
- marital\_db.

# Business Objective

1. Identifying and determine the root causes of attrition customer
2. Provide proactive measures for customers who may be has potential risk of attrition.

# Data Exploration

```
WITH btnp_combine AS (  
  SELECT cdh.[CLIENTNUM], cdh.[idstatus]  
    , cdh.[Customer_Age]  
    , cdh.[Gender]  
    , cdh.[Dependent_count]  
    , cdh.[Educationid]  
    , cdh.[Maritalid]  
    , cdh.[Income_Category]  
    , cdh.[card_categoryid]  
    , cdh.[Months_on_book]  
    , cdh.[Total_Relationship_Count]  
    , cdh.[Months_Inactive_12_mon]  
    , cdh.[Contacts_Count_12_mon]  
    , cdh.[Credit_Limit]  
    , cdh.[Total_Revolving_Bal]  
    , cdh.[Avg_Open_To_Buy]  
    , cdh.[Total_Trans_Amt]  
    , cdh.[Total_Trans_Ct]  
    , cdh.[Avg_Utilization_Ratio], s.status, e.Education_Level, c.Card_Category, m.Marital_Status  
  FROM [BTPNS_Filter_Customer].[dbo].[customer_data_history] cdh  
  LEFT JOIN [BTPNS_Filter_Customer].[dbo].[status_db] s ON cdh.idstatus = s.id  
  LEFT JOIN [BTPNS_Filter_Customer].[dbo].[education_db] e ON cdh.Educationid = e.id  
  LEFT JOIN [BTPNS_Filter_Customer].[dbo].[category_db] c ON cdh.card_categoryid = c.id  
  LEFT JOIN [BTPNS_Filter_Customer].[dbo].[marital_db] m ON cdh.Maritalid = m.id  
)  
  
SELECT *  
INTO [BTPNS_Filter_Customer].[dbo].[BTPN_COMBINE]  
FROM btnp_combine;  
  
SELECT idstatus, status, count(idstatus) as Count  
FROM btnp_combine  
GROUP BY idstatus, status
```

## Num of Customers

	idstatus	status	Count
1	2	Attrited Customer	1627
2	1	Existing Customer	8500

# Data Exploration

After merging all available data, this exploration will focus on customers with id status 2 or attrited customers, because these customers have a tendency to churn

## Education Level

	status	Education_Level	Count
1	Attrited Customer	Graduate	487
2	Attrited Customer	High School	306
3	Attrited Customer	Unknown	256
4	Attrited Customer	Uneducated	237
5	Attrited Customer	College	154
6	Attrited Customer	Doctorate	95
7	Attrited Customer	Post-Graduate	92

## Marital\_Status

	status	Marital_Status	Count
1	Attrited Customer	Married	709
2	Attrited Customer	Single	668
3	Attrited Customer	Unknown	129
4	Attrited Customer	Divorced	121

```
SELECT status, Education_Level, count(Education_Level)
as Count
FROM btpn_combine
WHERE idstatus = 2
GROUP BY status, Education_Level
Order BY count (Education_Level) desc
```

```
SELECT status, Marital_Status, count(Marital_Status) as
Count
FROM btpn_combine
WHERE idstatus = 2
GROUP BY status, Marital_Status
Order BY count (Marital_Status) desc
```

# Data Exploration

## Income Category

```
SELECT status, Income_Category, count(Income_Category) as  
Count  
FROM btnp_combine  
WHERE idstatus = 2  
GROUP BY status, Income_Category  
Order BY count (Income_Category) desc
```

	status	Income_Category	Count
1	Attrited Customer	Less than \$40K	612
2	Attrited Customer	\$40K - \$60K	271
3	Attrited Customer	\$80K - \$120K	242
4	Attrited Customer	\$60K - \$80K	189
5	Attrited Customer	Unknown	187
6	Attrited Customer	\$120K +	126

1.

## Income Category Based on Marital\_Status

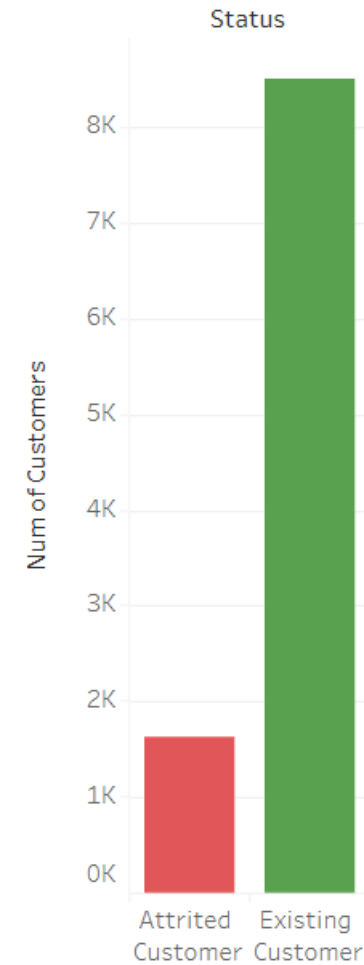
```
SELECT Marital_Status, Income_Category,  
count(Income_Category) as Count  
FROM btnp_combine  
WHERE idstatus = 2  
GROUP BY Marital_Status, Income_Category  
Order BY count (Income_Category) desc
```

	Marital_Status	Income_Category	Count
1	Married	Less than \$40K	263
2	Single	Less than \$40K	256
3	Married	\$40K - \$60K	127
4	Single	\$40K - \$60K	105
5	Married	\$80K - \$120K	103
6	Single	\$80K - \$120K	92
7	Married	\$60K - \$80K	86
8	Single	\$60K - \$80K	78
9	Married	Unknown	78
10	Single	Unknown	78
11	Single	\$120K +	59
12	Married	\$120K +	52
13	Unknown	Less than \$40K	47
14	Divorced	Less than \$40K	46
15	Unknown	\$80K - \$120K	25
16	Divorced	\$80K - \$120K	22
17	Divorced	\$40K - \$60K	20
18	Unknown	\$40K - \$60K	19
19	Unknown	Unknown	17
20	Unknown	\$60K - \$80K	15
21	Divorced	Unknown	14
22	Divorced	\$60K - \$80K	10
23	Divorced	\$120K +	9
24	Unknown	\$120K +	6

# INSIGHT VISUALIZATION

## Customer Status

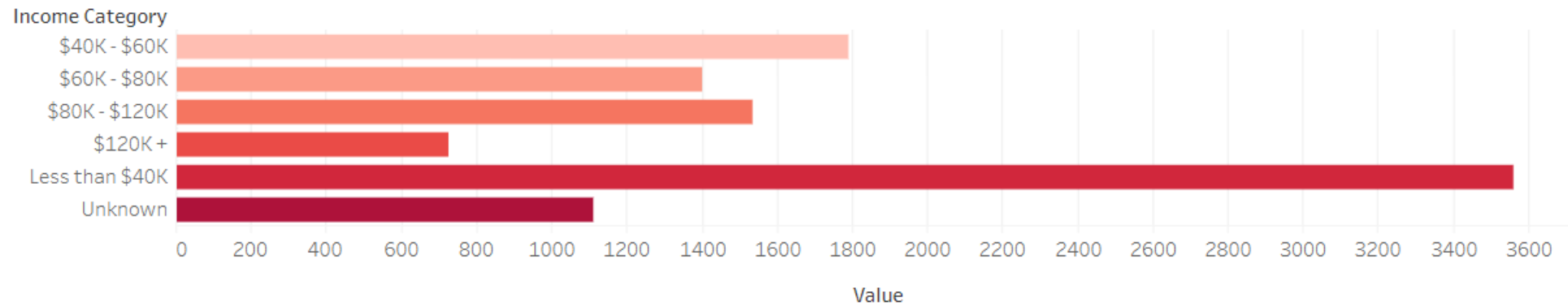
Based on our data from the total customer population, 16% have an attrited status, while 84% have an active status.





# INSIGHT VISUALIZATION

## Num of Income\_Category

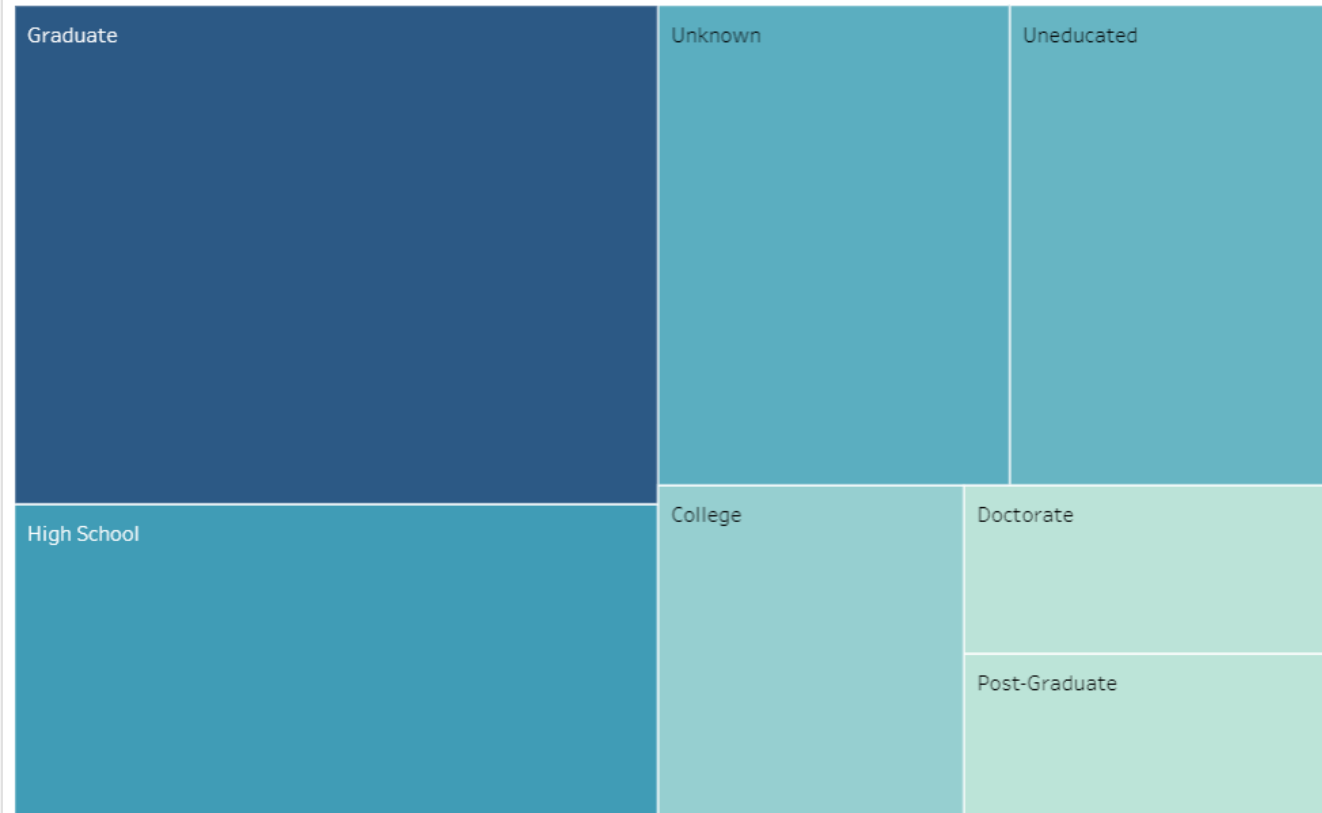


## Num of Income\_Category

Based on the income of attrited customers, Most of customer who leave the credit card services has income less than \$40K, and the lowest has an income more than \$120K

# INSIGHT VISUALIZATION

Education Level Based on Attrited Customer



## Education Level

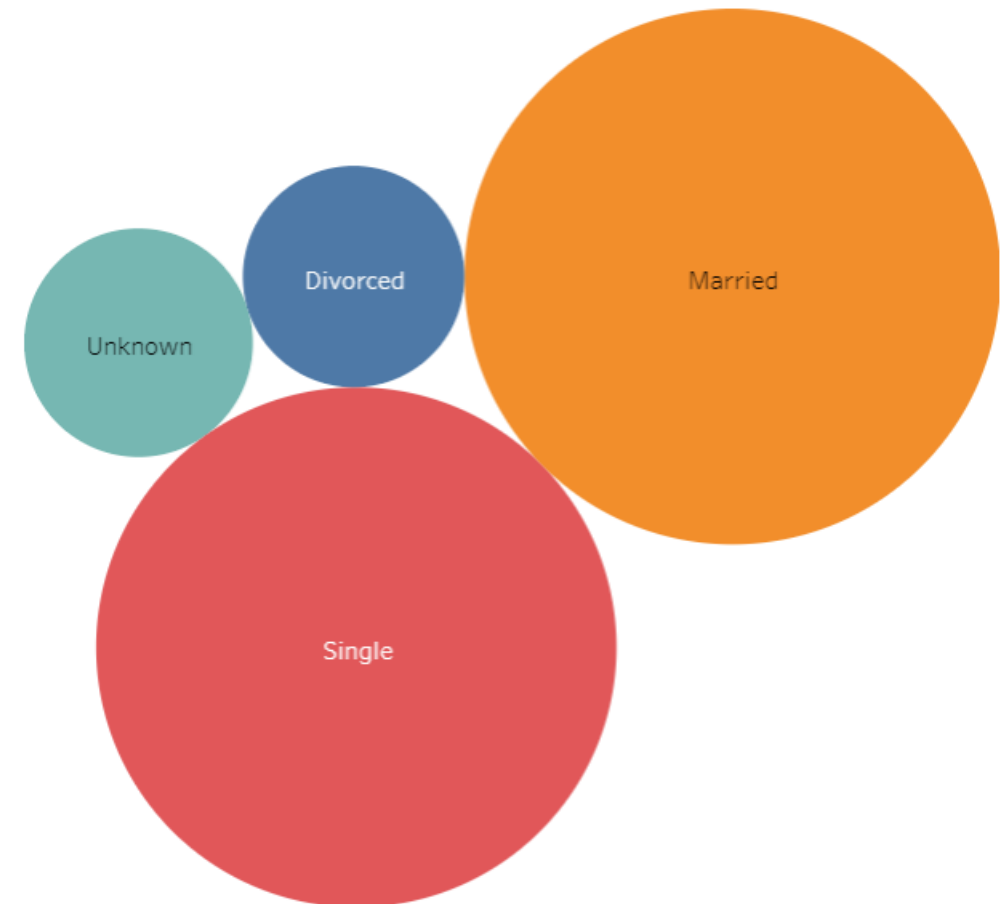
Based on educational level, the highest number of attrited customers is observed in educational level is "Graduate," and the second is "High school"

# INSIGHT VISUALIZATION

## Marital Status

Based on marital status, the highest number of attrited customers is observed in marital status "Married," followed by "Single" marital status.

Marital Status Based on Attrited Customer





# Summary

Based on the insights explored from the available data :

- Customer attrition is predominantly driven by customers with lower to middle-income levels, earning less than \$40,000
- Customers with a “single” and “married” marital status also have a vulnerability to churn.
- Conducting further observations regarding credit card usage among customers to provide more precise according to their needs. Because maybe there are external factors can be associated with their payment failure
- Open for feedback and customer complaint service