Dashboard 5- Summary and Recommendations

Data Preprocessing-

- Check every column of dataset for null values and duplicate values.
- In columns like first time home buyer, PPM ,Number of Borrowers X values are present which are not available values. Replaced that values with the respective mode value of column.
- First payment date and maturity date columns shows date in number format. Converted number to date using formula [DATE(INT(C2/100),MOD(C2,100),1)].
- Calculated credit range column using formula [IFS(A2<=650, "Poor", A2<=700, "Fair", A2<=750, "Good", A2<=900, "Excellent")].
- Calculated Is first time home buyer column from First time home buyer using formula [IF(“First time home buyer “="N",0,1)]
- Calculated LTV Range from LTV column using formula[IFS(P2<=40,"Low",P2<=70,"Medium",P2<=105,"High")].
- Calculated Repay Range using formula [IF(AF2<=48, "0-4yrs", IF(AF2<=96, "4-8yrs", IF(AF2<=144, "8-12yrs", IF(AF2<=192, "12-16yrs", "16-20yrs"))))]

Dashboard -

1 .Imported data from Excel in power BI using get data option.Then check the data before loading and click on load option.

2 .First changed canvas background with image which is downloaded from internet. and apply to fit to canvas .

KPI's:-

3 .Then Created KPIs like Prepayment rate, delinquency rate, Total Number of Loans,

```
Prepayment_Rate =
      VAR TotalRows = COUNTROWS('finalpr dataset')
      VAR PrepaidCount =
         SUMX('finalpr dataset',
            IF(
              AND('finalpr dataset'[OrigUPB] / 'finalpr dataset'[OrigLoanTerm]
            * 'finalpr dataset'[MonthsInRepayment]< 'finalpr dataset'[OrigUPB]
            * 0.2,'finalpr dataset'[OrigUPB] * 0.1 <
            'finalpr dataset'[OrigUPB] / 'finalpr dataset'[OrigLoanTerm] *
            'finalpr dataset'[MonthsInRepayment]
            ),1, 0 ) )
       VAR PrepaymentRate = DIVIDE(PrepaidCount, TotalRows)
       RETURN
       SWITCH(
         TRUE(),
         ISBLANK(PrepaymentRate), BLANK(),PrepaymentRate
         )
```

```
Delinquency Rate = DIVIDE (CALCULATE (COUNTROWS('finalpr dataset'),'finalpr
dataset'[EverDelinquent] = 1 ), COUNTROWS('finalpr dataset'),0)
```

```
Total Number of Loans=count("LoanSeqNum")
```

Filters:-

4.Then created Filter panel using slicer option available in visual types.

- Time Filter-drag field maturity date in slicer to create date filter.and format the slicer using slicer setting option.Make a slider to change in between dates.
- Loan status- drag field ProductType in slicer and did the formatting.
- Credit Range Filter-used field credit range and made the changes like font ,color, background ,borders etc.
- LTV Range Filter-used field LTV range and accordingly made changes.
- Property Type- -Drag snd drop property type field in slicer and did the formatting.
- Loan Purpose Filter- Drag and drop field Loan Purpose in slicer and did formatting.
- Delinquency Status- Drag and drop the ever delinquent field in slicer and did formatting like background color,vertical list as a slicer option,Font etc.
- Property State- Drag and drop the Property state field in slicer and did formatting like background color,vertical list as a slicer option,Font etc.

Visualization Chart-

- Line chart -.

  1.Prepayment Rate by Time-

  It is created using Prepayment rate and maturity date fields.

  It shows Prepayment rate is highest for year 2031.

  I have added forecasting which shows prepayment rate which toggle between 62.42% and 52.35% over the time.

  2.Delinquenct Rate by Time-

  It is created with Delinquency rate and Maturity date column.

  It shows Deliquency Trends

  It shows delinquency rate is highest for year 2026.

  Lowest Delinquency Rate is for year 2027(0.15)

  I have added forecasting which shows constant delinquency rate (0.23) over the time.

- Pie Chart- It is created with fields property state and prepayment rate.
  It shows top 5 states with high prepayment rate.
- Funnel chart- It is created with credit range field and prepayment rate.
  It shows prepayment rate for each credit range in the form of widh of segment.

Text Box –

I have created text box and added a text with dynamic values.Fields like

Average Interset rate

Average OrigUPB

Average Loan Term

Average month Delinquent.

Percentage of loans ever delinquent

Prepayment rate by Geographical region

Total mortgage securities by state.

Summary:-

- In line chart of prepayment rate over time ,Trend line shows that prepayment rate is increasing over the time.Forecasting shows that prepayment rate toggle between(60.42%) and (52.35%)
- In delinquency trends ,forecasting shows that delinquency rate is constant(0.23) over the time.
- When we apply Delinquency status 0 ,prepayment rate is (52.68%)and Delinquency rate is (0.25) .
- For Delinquency status 1 ,prepayment rate is (44.89%), Delinquency rate is (1.00) ,interest rate is (6.97)and 100% loans are ever delinquent.

- For poor credit range prepayment rate is low i.e (46.12%), Delinquency rate is (0.41) ,interest rate is(7.02) ,average month delinquent is 6 and 40.56% loans are ever delinquent.
- For Excellent credit range prepayment rate (51.41%), Delinquency rate is (0.09) ,interest rate is(6.87) ,average month delinquent is 0 and 9.11% loans are ever delinquent.
- For good credit range prepayment rate is high i.e.(52.78%), Delinquency rate is (0.15) ,interest rate is(6.91) ,average month delinquent is 1 and 14.87% loans are ever delinquent.
- For good credit range prepayment rate is (50.32%), Delinquency rate is (0.26) ,interest rate is(6.96) ,average month delinquent is 3 and 26.13% loans are ever delinquent.
- Pie chart shows the top 5 states having high prepayment rate.
- Funnel chart shows that for credit range Good prepayment rate is hig(52.78%)h and for poor range prepayment rate is low(48.12%).

Recommendations:-

- Focus on top 5 states where prepayment rate is high and apply strategies to avoid prepayment risk.
- Offer incentives or rewards for on-time payments
- Provide educational resources and support services to help customers understand the importance of timely payments, financial planning, and credit management
- Continuously monitor trends in prepayment rates, delinquency rates, and credit performance over time.
- Adjust interest rates, fees, and terms accordingly to mitigate risk and attract creditworthy customers.